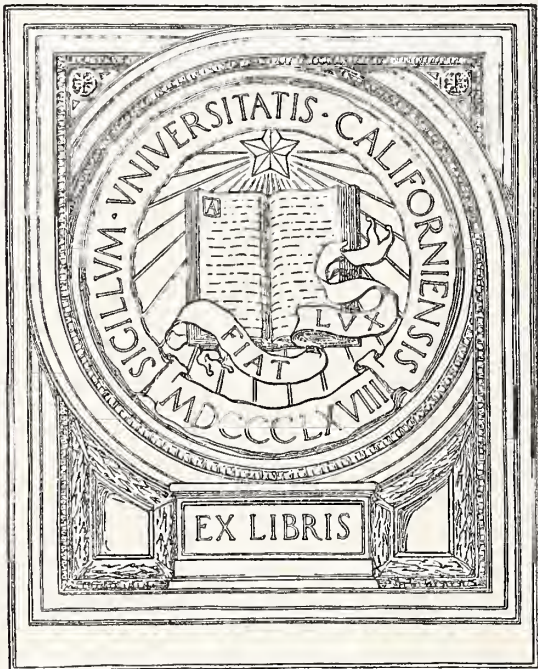
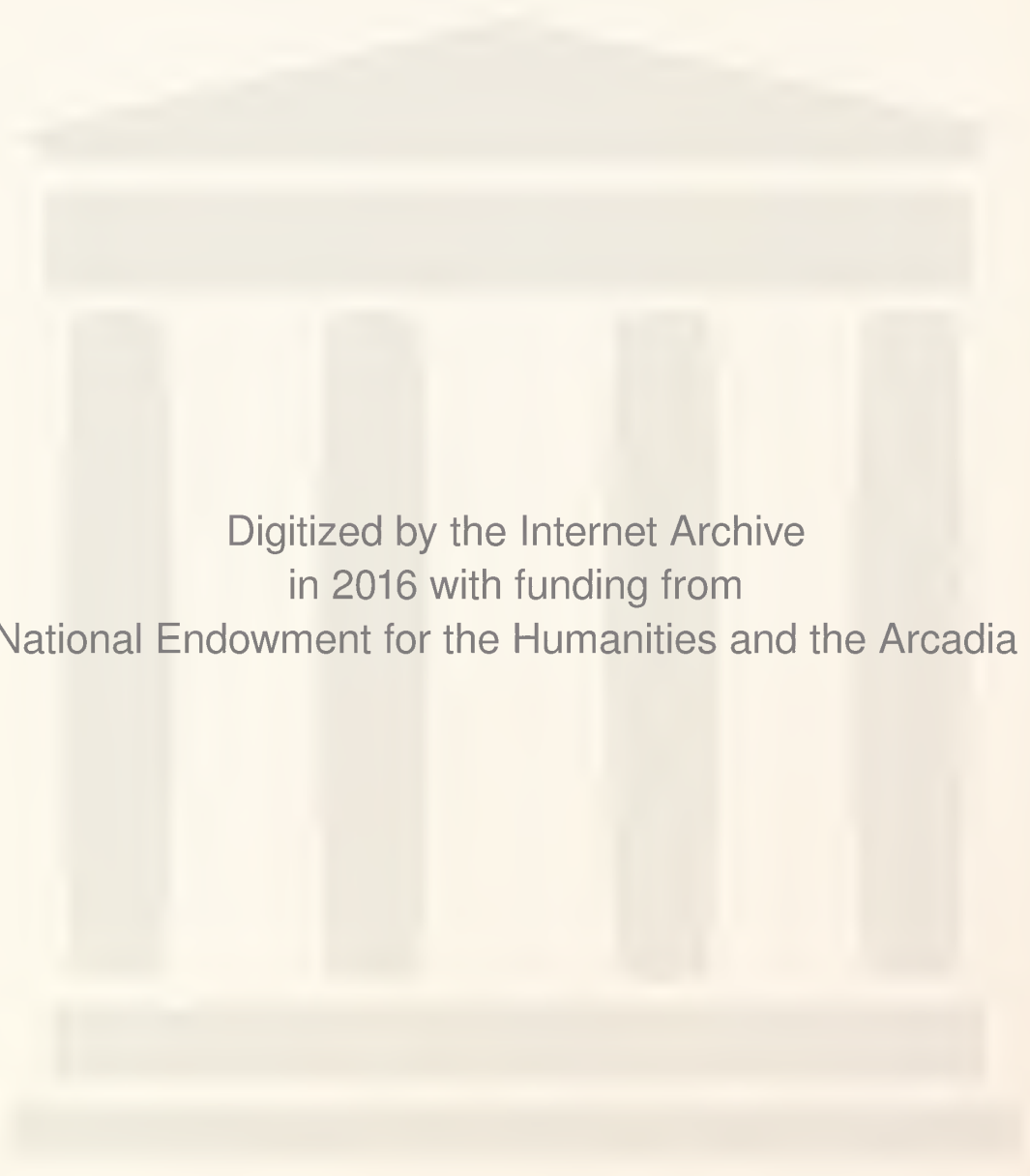


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The Journal

of the

Maine Medical Association

St. Andrew's Hospital Number

January, 1954
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The Journal of the Maine Medical Association

Volume Forty-Five

Portland, Maine, January, 1954

No. 1

ACUTE MESENTERIC VENOUS OCCLUSION — ETIOLOGY UNKNOWN

Case Report

PHILIP O. GREGORY, M. D., St. Andrew's Hospital, Boothbay Harbor, Maine

This 71-year-old white man was admitted to the hospital for observation and diagnosis. He complained chiefly of abdominal distress localized mainly in the epigastric region, accompanied by gas and distension. There had been no nausea or vomiting. He had been treated with Stilbestrol 3 mgm. daily for enlarged prostate (? Ca. of prostate). On admission his temperature was 97, pulse 82, respiratory rate 22. Blood pressure was 160 systolic and 80 diastolic. The tongue was coated. He had an enlarged thyroid (right lobe) of which he was aware; epigastric tenderness and soreness extended under both costal margins. The abdomen was distended, soft and tympanitic. The red blood cell count was 5,010,000 per cm., hemoglobin 96%. The white blood cell count was 12,800—79 polys. and 21 lymphs. Urinalysis showed a specific gravity of 1.025, 2 plus albumin, no sugar, acetone or diacetic acid were present. X-rays of the G. I. Tract and gallbladder were taken. These revealed a non-functioning gallbladder, colon distended with gas, but otherwise normal, no stomach pathology. Chest X-ray showed a trachea displaced to the left of the midline due to enlarged thyroid. Lung fields appeared normal, the heart and great vessels were not remarkable.

The patient remained under observation for several days during which time supportive and palliative treatment were given. There was no improvement in

his condition and he continued to have abdominal pain. Stools were clay colored or light yellow. The course of this patient's illness was down-grade, and during the 7th night of hospitalization his condition worsened appreciably. An exploratory laparotomy was now clearly indicated as a life saving measure. The preoperative diagnosis was that of: an acute abdomen—possibly appendicitis, possibly cholecystitis, possibly mesenteric thrombosis.

Operative procedure: Under a general anesthetic the abdomen was prepared with Zepharin. A lower right rectus incision was made. A mesenteric thrombosis was found with 1 foot of small bowel which had become black, thrombi extended through the mesentery so that it was necessary to remove approximately 7 feet of small intestine and make a side to side anastomosis. A Penrose drain was placed down to the mesenteric stump. The abdomen was closed in layers using No. 0 chromic catgut on the peritoneum and No. 1 double chromic catgut on the fascia. Stainless steel wire was used on the skin. During the operation the patient received 1000 c.c. of 10% dextrose in distilled water. Although this patient was considered a poor operative risk his vital signs stayed within the limits of normal during surgery and he was returned to his room in fairly good condition. A transfusion of 500 c.c. of citrated whole blood was given immediately following the operation.

Depoheparin 400 mgm. was given intramuscularly

at the end of the surgery and prothrombin time determination was begun and checked daily. Depo-heparin 200 mgm. was given I.M. on two succeeding days and then Dicumarol 50 mgm. every 3 hours for two days, then 50 mgm. daily, the prothrombin time being brought to 41 seconds—15% in effort to obviate further thrombus formation. Prostigmin 1 ampule every 2 hours, Penicillin 300,000 units every 3 hours, Streptomycin 0.5 gm. every 12 hours were given for 3 days postoperative, and intravenous feedings as indicated.

The second night postoperative, severe distension was relieved with flaxseed poultices and a magnesium sulfate, glycerin and water enema. Aside from this episode, recovery was amazingly uneventful. Ambulation was started on the third day. Sutures were removed on the 11th day, and the patient was discharged to his home on the 14th day postoperative, apparently recovered.

Pathological findings:—The central portion of the section of small bowel removed, showed necrosis of the wall. The mesentery in this area was markedly hemorrhagic and there was evidence of thrombosis of the small veins in this zone. The ends of the specimen showed perfectly intact intestine and a relatively normal blood supply, indicating that the entire involved area had been adequately removed.

Microscopic examination of a section of the mesentery showed large venous channels completely filled with clotted blood.

Section of the wall of the intestine showed a sharp demarcation between reasonably normal but edematous intestine and an area where necrosis was proceeding at a considerable pace with degeneration of cells and infiltration with neutrophils and lymphocytes.

Discussion: Much has been written about the etiologic background of mesenteric vascular occlusion. The consensus is that etiologic factors may be classified as follows:¹

1. Mechanical causes: a. volvulus, b. adhesions, c. strangulation, d. pressure of adjacent tumors and portal stasis.
2. Traumatic causes: a. trauma of the abdomen and b. tearing of the mesentery.
3. Blood dyscrasias: a. polycythemia vera and b. splenic anemia.
4. Infections: a. appendicitis, b. pelvic inflammation, c. cholecystitis, d. peritonitis, e. diverticulitis and f. thrombophlebitis, g.¹ parotitis followed by pancreatitis.
5. Cardiac causes:—for arterial type—a. auricular fibrillation and b. rheumatic heart disease.
6. Miscellaneous causes: a. periarteritis nodosa, b. mesenteric thrombosis following lumbar sympathectomy or procaine block of the lumbar chain.²
7. Unknown causes: In a very large number of cases, thrombosis of the mesenteric vein must come under the etiologic heading of primary venous thrombosis without apparent cause.³

Acute mesenteric vascular occlusion is one of the most serious abdominal accidents, with a mortality rate of above 90 per cent in reported cases. This high mortality rate is due to the fact that the condition is seldom diagnosed preoperatively, perhaps because the condition itself is rare and presents no typical clinical picture.

It is felt that anticoagulant therapy—heparin, and dicumarol — with careful and repeated checking of prothrombin, is of utmost importance in preventing spread of thrombosis.

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Health on the Radio

Demand for AMA radio transcriptions on common health subjects hit an all-time high during 1953. During the year more than 700 sets were distributed for broadcasting over local radio stations in all parts of the country. Assisting the Bureau of Health Education in distributing these health education platters and promotional material are 14 distributing centers set up by 13 state medical societies and the Alaska Department of Health. The Pennsylvania Medical Society, for example, arranged 1,989 local programs in 1953 and the Louisiana State Medical Society 1,157.

One of the most popular series was "Heart of

America," which presents 13 case reports from outstanding cardiologists. Other popular new series include: "Chats with the Champs," "Help Yourself to Health," "Yours for Health," and "June, July and August."

These transcriptions are provided without charge by the AMA as a public service for medical societies and woman's auxiliaries. Universities and high schools, state and local departments of health, various voluntary health agencies and allied health organizations, such as heart and cancer societies, often request these transcriptions and sponsor them locally. Such requests always are cleared through the local medical society.

COMMENTS IN NEURO-OPHTHALMOLOGY*

EDMUND B. SPAETH, M. D., Philadelphia, Pa., and Boothbay Harbor, Maine

There are many aspects in neuroophthalmology which are of great diagnostic significance. These various pathological conditions are manifested in oculomotor disturbances which are supranuclear in type, nuclear in type or infranuclear in type. They are the result of cortical pathology and disturbances in the conjugate functions of the eyeballs, and the nuclear and infranuclear conditions which manifest themselves with disturbances in the isolated muscles or groups of muscles. Other oculomotor situations are seen in the study of the iris reflexes,—either the absence of such reflexes or pathological changes as one sees them in a dilated pupil with paralysis of the sphincter from third nerve involvement, or with the contracted pupil as is seen with cervical sympathetic paralysis. A third ophthalmic manifestation is that which one sees in disturbances in retinal function, central and/or peripheral. These are seen as disturbances of this in central visual acuity, or in the fields of vision. Certain manifestations of this are to be discussed at this time in detail.

The first is a discussion of retrobulbar optic nerve neuritis from the standpoint of etiology. In this condition there is usually only one symptom, that is a profound impairment of vision, often sudden and abrupt in onset, and predominantly unilateral. To quote an old saying, relative to retrobulbar neuritis (age has not dulled the truth of the comment!)—"neither the patient nor the physician can see anything." This is literally true in the largest percentage of instances. The optic nerve papilla has an absolutely normal appearance. Histologically that part of the optic nerve which is involved, in accord with the accepted classifications, indicates a selective involvement of the papillomacular bundle at any level in the optic pathways from the eye to the external geniculate body. With this conception it becomes obvious that a focus in the optic nerve close to the globe is likely to be associated with edema of the nerve-head, and that such changes do not invalidate the use of the term. The frequency with which there is selective involvement of the papillomacular bundle and the fact that "retrobulbar neuritis" automatically suggests the presence of a central field defect further justifies such usage. If "retrobulbar neuritis" is used merely in the sense that the lesion is posterior to the globe it should be made clear, because of our present day conceptions regarding the probable explanations for papilledema, that it signifies a lesion posterior to

the point of exit of the central retinal vein from the optic nerve, venous blood returning intracranially.

A great deal of the neuroophthalmologic literature during the early post-war years was concerned with the subject of visual disturbances among prisoners of war, commonly called "camp eyes" in the European literature. These visual disturbances, usually in the form of a dense, bilateral, permanent central scotoma, have been attributed to a nutritional deficiency. Such visual damage from malnutrition has now been recognized for many years in association with cases of pellagra, beri-beri and tobacco-alcohol amblyopia. It should be pointed out that a nutritional origin for retrobulbar neuritis is not completely established. Attempts to produce retrobulbar neuritis by experimental dietary deficiencies have failed.¹ The marked discrepancy between the frequent occurrence of visual disturbances in the prison camps of Southeast Asia and the infrequent occurrence among similarly starved prisoners in European camps has not been explained.

Central scotomas have been described among Jamaican children, presumably due to nutritional retrobulbar neuritis. The vision improved with improved diet in these cases.² The weight of the evidence in such cases seems to point to a possible multiple vitamin deficiency plus other nutritional disturbances not known. It is significant that those prisoners of war who were totally starved had fewer neuritic disturbances than those who were equally vitamin deficient but were granted a more liberal carbohydrate intake.

There is no doubt that there are many etiological factors connected with retrobulbar neuritis. Local inflammatory endogenous toxins, exogenous toxins and hereditary optic nerve disease are all possibilities. These, usually, can be eliminated or their significance confirmed through the history. In so far as causative comment is concerned; at this time the greatest factor in etiology is that group of demyelinating diseases, which include disseminated sclerosis; disseminated encephalomyelitis, spontaneous, or following infectious diseases; neuromyelitis optica; encephalitis periaxialis diffusa (Schilder's disease); pertussis encephalopathy; and forms of polyneuritis of indefinite etiology; in order of their frequency significance.

In a recent analysis of one hundred consecutive cases of multiple sclerosis, as studied by the Department of Neurology and of Ophthalmology at the Graduate School of Medicine with which the author is connected, it was found that 56 per cent of all cases had significant ocular manifestations; that 48 per

* Presented in part before the Annual Seminar, The Graduate School of Medicine, University of Pennsylvania, "Advances in Medicine and Surgery," September 20, 1953.

cent of all cases had ocular symptoms as the initial manifestations and first attack of multiple sclerosis, and of these cases, 55 per cent had retrobulbar neuritis as the initial manifestation of that disease, i.e., multiple sclerosis.

It is not too many years in the past that retrobulbar neuritis was very commonly blamed to nasal accessory sinus disease. The author has no hesitancy in agreeing to the likelihood that suppurating nasal accessory sinus pathology has caused, by continuity and contiguity of tissues, a true optic nerve neuritis (that is papillitis, an acute inflammatory process of the optic nerve papilla). On the other hand, the author has never seen a case of retrobulbar neuritis which he felt was due, without doubt, to nasal accessory sinus disease.

To recapitulate, this most important subject of "recurrent attacks of impaired vision without demonstrable retinopathy," in the absence of other exogenous toxins common to industries, and to various forms of medication, must be considered as prodromal to that group of demyelinating diseases already mentioned.

The next subject for discussion is relative to the ophthalmologic aspects of intracranial and orbital aneurysms. It is rather interesting that the symptomatology of arteriovenous aneurysms is tremendously wealthy in its ophthalmic aspect, while the other, that of intracranial aneurysms, spoken of perhaps as intact intracranial aneurysms, has, from an ophthalmological standpoint, a confused tangle of conflicting signs and symptoms. This calls attention to, perhaps, the most important aspect of this subdivision, that is, third and/or sixth nerve oculomotor paralyses. It is quite likely that so-called ophthalmoplegic migraine with recurring and periodic oculomotor palsy is also a syndrome of vascular origin due to pressure on the nerve, by a leaking aneurysm, by one that is still intact, or by one having abnormal or unusual relation to the third nerve, — intact or leaking.

When one considers the large number of people who suffer from migraine and the rather small group who develop subarachnoid hemorrhage or other evidence of aneurysm of intracranial vessels, it would seem that there is no good reason to assume that migraine itself has intracranial aneurysm as its etiologic basis. On the other hand, when migraine-like attacks occur later in life than is usual for the onset of true migraine and especially if ophthalmoplegia or hemianopsia develops, the possibility of an aneurysmal etiology of the migraine should be considered.

From an ophthalmological standpoint intracranial aneurysms, excluding arteriovenous fistulae (so-called pulsating aneurysms), should be subdivided into three classifications. First, those which have outstanding in their ophthalmic symptomatology changes in the oculomotor realm. This means a consideration

of the third and sixth nerves, and that phenomenon of regeneration of misdirected third nerve fibers, spoken of as the pseudo-Graefe syndrome. The sign of oculomotor disturbances is diplopia (double vision). The second subdivision would be those aneurysms which have outstandingly changes in the fields of vision. Visual field defects of homonymous characteristics, accompanied by other signs of increased intracranial pressure. The third subdivision is that group of intracranial aneurysms, especially of the posterior fossa, which have no ocular signs other than those of intracranial space-taking pathology, that is,—they simulate posterior fossa neoplasms.

It is rather interesting that within the span of the author's personal experiences, the diagnosis of an intracranial aneurysm has changed from a condition found largely at autopsy, to a situation now present with a conclusive preoperative diagnosis through the combined efforts of the neurologist, the ophthalmologist, and the constant media studies of the roentgenologist and the neurosurgeon. This is, to say the least, quite an achievement.

The last item which is to be considered is a brief discussion of the ocular findings of chiasmal pathology. This is a chronic neuroophthalmological problem with but little in it wholly new. If any one observer or researcher ever thought he had discovered something new it is almost sure that a search of the literature would have disillusioned him. Two important items will bear review.

The first is relative to binasal hemianopia. This is a rare condition and if thought to be present means, conclusively, chiasmal pathology lateralizing to both sides of the chiasm, i.e., multiple lesions. The careful observer must be most meticulous about this diagnosis. If actually present it means only one thing, that just stated. It is rather likely that anatomic possibilities for its development (as rare as these are) are more common than the actual demonstration of binasal field defects.

Binasal hemianopia is most disabling from the patient's standpoint. It is easy to see that an individual could have an extensive field loss in his temporal fields or in the homonymous portions of his two fields of vision without complete incapacity. As binasal hemianopia means the loss of the nasal halves of the two fields of vision directly in front of him, the patient will have blindness looking straight to the front, and this cannot be evaded or disregarded. If present one must think immediately of bilateral vessel pathology in the two major arterial and venous intracranial vessels, the internal carotid arteries or the internal jugular veins, or their major branches about the chiasm.

A second consideration is the fallacy of that common statement that the classic field changes of chiasmal pathology are those of bitemporal hemianopia. To be sure, these fields when present, mean without

equivocation chiasmal pathology. While diagnostic of that, they are not classical for that pathology. The classical characteristic of chiasmal pathology, in the fields of vision, is the tremendous variability possible. Homonymous field defects, peripheral and/or central, especially normal peripheral fields with homonymous central defects (in addition to those already mentioned), are all found at various times in the course of chiasmal pathology, depending upon whether the pathology involves the anterior inferior, or the anterior superior portions of the chiasm, the posterior inferior or the posterior superior portions of the chiasm, the lateral aspects of the chiasm or the inferior or superior portions of the chiasm at the exact decussation of the fibers. Actually the diagnosis of chiasmal pathology can, and should be made even before there are roentgenologic changes in the sella tursica conclusive for that with resulting permanent optic nerve atrophy.

A second point relative to hypophyseal tumors is quite significant and really new. Spontaneous pulsation of the central retinal vein, which remains visible after compression of the jugular vein on the same side, in contradistinction to the usual spontaneous central retinal physiological venous pulsation which

disappears with such compression, is rather likely diagnostic of retrochiasmal neoplasm. Weinstein, who made this recent observation (Weinstein of Budapest), felt that the growing tumor exerted pressure upon the cavernous sinus which is intimately connected to and surrounding the pituitary body whereby the tension within the central retinal vein is increased and if this equals the tension of the retinal capillaries it would cause this persistent pulsation.

CONCLUSIONS

In conclusion, the significance of retrobulbar neuritis has been stressed as a diagnostic point. A neuro-ophthalmologic aspect of intracranial aneurysms has been presented because of the tremendous significance of these findings. Lastly, the value of atypical fields of vision in chiasmal pathology has been stressed because these fields have such definite localising value and they are found before permanent and nonreversible damage has occurred to vision.

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MENINGOCOCCUS MENINGITIS

Case Report

GEORGE E. DASH, M. D., Boothbay Harbor, Maine

A ten-year-old male, was admitted to St. Andrew's Hospital at 2 P. M., August 1st, 1953. He had been in perfect health until six hours before admission at which time, he had vomited some clear yellow liquid material and complained of generalized aching. Shortly thereafter a generalized petechial rash appeared and the child was sent into the hospital. There was no history of previous serious illness.

Physical examination showed a well developed, well nourished male, lying on his left side, with some retraction of the head and knees bent on the trunk. The rash, petechial in character, which had developed very rapidly, was distributed over the skin of the entire body, and in the buccal mucosa, pharynx, conjunctiva and even the tympanic membrane. The pupils were widely dilated, equal, and reacted to light. The neck was tense, and resisted movement. Stiffness, tenderness, pain on movement were present in all the joints. Deep tendon reflexes were all hyperactive and more marked on the left. The patient responded sluggishly to questioning but was fairly well oriented. Based on the type of onset, the meningeal symptoms, and particularly the type of rash, the

impression was epidemic meningitis, with meningococcemia.

Laboratory findings however confused the diagnosis: White count 1,700 with 76% lymphs: red 4,460,000, and sedimentation rate 23. Spinal tap showed clear fluid under normal or slightly less than normal pressure: cell count 16 lymphs, 4 polys: globulin negative and sugar 86 mg. This extremely low white count and spinal fluid picture certainly did not fit our clinical impression. A number of possibilities such as agranulocytosis were considered and ruled out. Cortisone was given overnight in an attempt to raise the white count and penicillin started.

The next morning the laboratory picture had completely changed: 20,200 whites, mostly polys, spinal tap cloudy fluid under great pressure, 200,000 cells, mostly polys, 2 plus globulin and 100 mgs. sugar. The gram negative diplococci were found at this time, these laboratory findings confirming our first impressions.

Under treatment with penicillin and large doses of sulfapyridine, the child made an uneventful recovery,

and left the hospital on the ninth day with no sequelae.

The case was definitely sporadic, and the source of the infection not known.

There are several points of interest in this case which to us have justified our reporting it. First, a clinical diagnosis was made tentatively some 24 hours before laboratory confirmation: the extreme leukopenia, the low spinal fluid pressure and almost negative fluid findings would have been most misleading had not the clinical picture prompted a repeat of the laboratory examination. Second, the case showed how varied can be the symptoms of in-

fection with this organism: anything may be present from a mild form of meningococcemia to a definite meningeal infection with its attendant severe symptoms.

To one whose most active work was done in the pre-antibiotic days, the efficiency, simplicity and accuracy of antibiotic treatment as contrasted with the older method of repeated spinal taps and special anti-meningococcus serum is almost amazing. Again one is most gratified with the relative freedom from sequelae, hydrocephalus, vision and hearing defects and mental damage as compared to the former results.

X-RAY PREPARATION IN CASES OF SUSPECTED COLON POLYPOSIS

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Of the surgical diseases of the large bowel, polyposis poses more diagnostic and perhaps more therapeutic difficulties than the others. In cases of massive polyposis whether there be one or more localized areas or involvement of the entire colonic mucosa, demonstration by routine methods of examination is usually simple and accurate. The polyps accessible to direct visualization by endoscopy are readily found. It is the case with isolated lesion or lesions not directly visible that requires meticulous and painstaking efforts of the Roentgenologist for diagnosis, yet with the utmost care the percentage of error remains high. By repeated examinations it is unlikely that a positive diagnosis will be made where no polyps exist but it is often impossible to be sure that none are present.

Pathologists and surgeons are pretty well agreed that colonic polypi are potentially malignant, many unequivocally say that all those not removed will become carcinomatous in time if the subject doesn't succumb to some other disease. So there remains little question of the importance to the patient of early diagnosis. X-ray is the only means available for demonstration of lesions from the ileo caecal valve to the point reached by the sigmoidoscope.

Roentgenologists differ concerning technique of examination but there are some essentials which must be observed. Preparation of the patient so that the colon is free of all fecal and foreign material is mandatory. The choice of laxative is most often castor oil, two ounces given in the afternoon. Subsequent to the laxative, whatever is taken by mouth should be small in amount and of non-residue producing content. The following morning and preferably at least one hour before the examination the bowel is further cleansed with one or more saline enemas, the number being sufficient to produce a clear return. Even with

such preparation it is necessary to repeat the whole procedure after several days in those cases where polyps are found if false positive reports are to be avoided. Each examiner has his own preference of content of contrast medium used for the enema. I use a mixture of barium sulphate and powdered acacia to which hot water is added, after mixing this is diluted with cold water to suitable volume and temperature. I know the acacia increases the fluidity of the mixture, I think it helps to hold the barium in suspension, and possibly it causes better adherence to the bowel mucosa. There is considerable variation in the technique of making films, the double contrast air enema is quite uniformly used.

If the physician referring patients for X-ray examination of the colon for suspected polyps will keep the above in mind and explain the necessity of a careful and probably time consuming procedure, such patients will more likely co-operate and complete the examination to the satisfaction of all concerned. Many think that X-ray consists only of making an exposure which will reveal all there is between the tube and the film and some have reason for such belief.

Following is the report of a case which was easily diagnosed when examination was finally carried out after having been originally given up because of excruciating pain produced by the introduction of even a finger or rectal tube through the anus and because other findings suggested a cause for the symptoms.

A white female, age 21, senior in college and an honor student was first seen as an out-patient June 28, 1953.

In good health until 1943 when she developed diarrhea which has persisted to date, six to ten stools daily, loose, watery, foul odor, sometimes contain blood or mucous. No nausea or vomiting, patient

denies abdominal pain. G.I. series four years ago showed no pathology, no parasites ever found in stool.

Physical examination essentially negative except for apparent uniform sensitiveness of abdomen, patient denied any marked tenderness.

X-ray.—Normal chest, stomach and duodenum. At six hours stomach empty, very little of meal remained in the terminal ileum, practically none remained in the colon. At twenty-four hours, no barium remained in the G.I. Tract. Attempt to give barium enema failed because of severe pain produced by rectal tube, fresh bleeding from rectum followed and examination deferred until after laboratory reports. It was thought that the spleen shadow appeared large but aside from this and the extreme colonic irritability, nothing definite was demonstrated.

Laboratory reports. Hb. 62%, Rbc. 4,500,000, Wbc. 6,600, Diff. immature neutrophils 22, mature neutrophils 25, lymphocytes 41, monocytes 12. Rbc. poor in Hb., vary in size, and shape, many microcytes.

Gastric analysis—absence of free HCL for 2-hour period, highest total acidity 10° during 2-hour period.

With these findings it was decided to treat the patient for the achlohydria and anemia and omit the barium enema for the time being.

She seemed to improve for a time (probably the sense of well being was mental) but at end of 4 weeks it was decided that she was no better and she was admitted to the hospital.

Under general anesthesia digital examination

showed the rectum full of polyps which bled profusely. Following this a barium enema revealed polyposis of the entire colon, there was no splenic flexure and an area of irregular narrowing was present near the middle of the ascending colon. Although not characteristic, this could be due to malignant change.

With our present knowledge the only treatment of polyposis where the entire colon is involved is colectomy. The patient was advised to return home and consult the family physician concerning surgery. She and the parents seemed reluctant and were rather set with the idea of the girl completing her college education at Syracuse University during the next year. We recently received the information that it had been decided to "handle" the case by Christian Science, that the patient was much improved in every way and was gaining weight. Perhaps one should not scoff too much at the treatment, the symptoms in the case do not differ from those of chronic ulcerative colitis, polyps not infrequently complicate the disease. X-ray showed the colon to be shortened, the walls appear somewhat rigid. The case might well have started as colitis, there is a ten-year history, the polyposis could have developed since the negative X-ray examination four years ago.

Two films are shown, one taken when the colon was distended, the other after the barium enema had been allowed to run out by gravity through the rectal tube. It was neither feasible nor necessary to inject air into the colon and no film was taken after the enema had been expelled at stool.



Full Distension With Barium Enema



Following Evacuation of Enema of Gravity

TRENDS IN MODERN INDUSTRIAL MEDICINE*

EDWARD F. BUYNISKI, M. D., Medical Director, General Electric Company, Lockland, Ohio

The first Industrial Physicians in this country were surgeons, who became concerned over the high rate of infections and complications following occupational accidents and offered their services to industry. Their feeling was that by setting up procedures and seeing patients in the plants they could reduce the number of permanent disabilities. Industry resisted strongly any effort on the part of doctors to enter the plants and with the criticism of their own colleagues, it must have been a disheartening experience for the early Industrial Surgeons.

In 1896, Dr. Harvey was named the first Medical Director in this country. This was the first hint of a new trend in Industrial Medicine. Instead of the emphasis being made on facilities for the repair of trauma the physician began to concern himself with the prevention of accidents and maintenance of a safe working environment for the worker. Fifty-four years have since passed and the trend away from treatment of occupational trauma has gone in some cases to the extent that all injuries are referred to general and orthopedic surgeons. Such industrial medical establishments boast that the only suture material they have is emergency kits to be used for such purpose.

At this time it is hard to definitely state the direction that Industrial Medicine will take in the future. What influence certification of the specialty will have is only speculative. Will certification encourage industry to have physicians with completed board requirements supervising their medical programs? What will be the impact of such legislation as New Jersey, New York and Rhode Island have regarding Sickness Benefits? In these states, the company whose employees are healthy will have less premium to pay than a competitor who has sick employees. What effect will atomic energy have where plants using radioactive materials may employ one doctor for every 600 employees? What about the liberal interpretation of Workmen's Compensation Laws that is being made in states such as New York, where an employer practically pays for any medical emergency that may occur during a worker's working hours? We cannot neglect the impact that several graduate schools in Industrial Medicine are having through their graduates who enter industry with extremely high standards of Industrial Medicine. And finally, what effect will the trend of government interference in all lines including medicine have?

Let us survey the field of industrial medicine with

the idea of finding spots where things are being done differently and see how it may bear on future trends. As one visits modern industrial medical services, one becomes immediately impressed with the fact that universally the emphasis is on prevention of disease or accidents. One program describes its function as maintenance of the Human Machine and pursues the same philosophy as the Plant Maintenance Department. As part of a preventive program routine, chest X-rays at the time of employment, blood counts, urinalysis, and serologies are done and later repeated in order to catch destructive diseases early. The desire of doctors in these establishments is to detect disease in its early stages and refer the employee to the private practitioner for care. Many an industrial physician has expressed satisfaction and pleasure in detecting early cases of tuberculosis or malignancy in apparently healthy individuals. Some plants offer periodic physical examinations on a voluntary basis to their employees, and in some industries where hazardous materials are used, such examinations are compulsory and required as a condition of employment.

Industry spends large amounts of money on maintenance of machinery in plants, yet has not accepted the responsibility for care of a more valuable machine, the human being. As the labor market got tighter and the cost of replacing skilled people and experienced executives greater, industry began to pay attention to the health of its employees. It has been found more economical to screen applicants for employment and help them maintain good health and live longer than it is to put a person to work, neglect him until he dies and then replace him. Companies now send their executives to clinics for thorough annual examinations and find it profitable because their executives live longer and better as a result of this procedure. Some organizations find it more economical to have a team of specialists on the payroll who would accomplish the same objective within the confines of the plant, thereby, reducing the amount of time the busy executive is away from his job. Some chemical industries engage the services of a urologist to do cystoscopies to detect early bladder tumors, another employs a thoracic surgeon to investigate pulmonary disease as a result of one's occupation. Certain plants with specialized risks employ specialists such as dermatologists or psychiatrists to help develop a preventive program within the scope of their specialties. In general, one is impressed by the general reluctance on the part of the industrial physician to get involved in the treatment of non-occupationally connected conditions, and the eagerness with which he refers these problems to the private practitioners.

* Presented at a meeting of the Maine Chapter, American College of Surgeons, Waterville, Maine, November 16, 1953.

The use of specialists in industry can be found throughout the country. Companies, particularly railroads, still retain surgeons as their main type of doctor. Union groups, such as the Amalgamated Garment Workers, employ representatives of all specialties and provide complete care to their members at a reduced cost. Other Union groups function almost like an insurance company and rely on local specialists rather than placing them on a retainer fee. There is one plant I know, where the staff consists of a variety of specialists, including a gynecologist, who come into the plant for several hours a week and superficially practice industrial medicine. Needless to say such practice is looked upon with disfavor by most Industrial Physicians.

During the past decade, the worker has grown in stature. No longer is he willing to accept the role of "just another cog in a large impersonal wheel" but is now asking for individual recognition. Alert personnel people are taking cognizance of this evolution and are preparing their programs accordingly. Similarly, industrial physicians who are awake are also feeling this trend and are modifying their scopes. Capitalizing on the position that a doctor and nurse have in the minds of the people they offer to the patient a kind and sympathetic ear to any complaint or idea expressed by the individual worker. The fact that information so received remains privileged and does not disseminate into the plant makes the plant medical department a natural haven to the worker with personal problems. Once the medical personnel accept this trust and strive toward helping the employee as well as guiding him to better health, the efforts are quickly recognized by plant management and the medical group is usually placed on the top level of the organization chart.

During the past twenty-five years, the industrial physician found it necessary to be fully familiar with the conditions existing in the plant in order to make proper decisions. But with the rapid technological advancement of industry the conditions never remained static. With new materials and equipment being introduced it was impossible for the physician to be posted up-to-date. To help this situation the use of Industrial Hygienists was being more widely accepted as a necessary part of a good Industrial Medical Program. These people are usually graduate engineers who have acquired a health philosophy either through schooling or experience working in an Industrial Medical Department. Their responsibility is to keep a constant survey in a plant of all hazardous or toxic material, supervise its use and handling and recommend proper equipment to make the environment safe. As the physician becomes more occupied with medical problems, the industrial hygienist assumes a more important role. He may do a thorough investigation not only of the work habits of a worker with an undiagnosed skin lesion, but also of his hobbies and contacts outside of the

plant. He may even perform patch tests to demonstrate sensitivity to industrial substances. With the increasing importance of noise as a factor in producing occupational deafness, the industrial hygienist surveys the plant for excessive noise, recommends methods of attenuating the noise or provides and fits ear defenders. He may even assume the responsibility of obtaining audiograms and conducting studies concerning the relation of noise intensity and deafness.

With the introduction of radioisotopes in industry it soon became obvious that contamination of the surrounding community or plant facilities would result in closing of the plant. People as yet have not learned enough facts concerning this form of energy to face accidents involving radiation sensibly. Recently we had an occasion where an employee developed idiopathic thrombocytopenic purpura following the spilling of microscopic amount of low energy uranium. When this was relayed to the attending physician he immediately concluded a causal relationship between the disease and the incident and frightened the employee who in turn aroused his co-workers to a point of hysteria. It was only after careful contact with the physician that this was clarified and the man returned to work. To prevent such situations the health physicist with the coöperation of the Industrial Physician must constantly educate the workers through perpetual training sessions, posters, information bulletins, and personal contacts.

To avoid any damage as a result of exposure to radiation, a specialized branch of Industrial Hygiene has come into existence and is designated as Health Physics. Personnel in this branch are trained to evaluate and measure the intensity of radiation and by calculations determine the time interval that an employee can work in that environment without suffering any ill effects from the energy. Since data concerning exposure and harmful effects is not clearly determined the health physicist maintains accurate records of all exposures. Over a period of years such information will prove valuable for communities to determine the amount of exposure that its members will be willing to accept. To keep radioactive materials confined to definitive areas, the health physicist devotes a great deal of time to routine surveys of the plant as well as areas adjoining it. At several plants, homes of employees have been surveyed to assure the families that no radioactive materials have been transported from work. Many of these substances have long periods of activity ranging from days to hundreds of years. Once created they have to pass the time emitting radiation and it becomes the problem of the health physicist to plan, and supervise their storage or disposal.

It is estimated that the number of dispensary visits in a plant per month will equal its total plant population. From this it is obvious that a plant physician cannot see everyone who comes for aid. In order to

adequately cover the demand, the industrial physician depends on the industrial nurse to carry out his preventive medical program. It is the interest in the welfare of the employee that helped advance modern industrial medicine. In some plants she is the counselor to whom all with problems go, without fear of jeopardizing their jobs regardless of what the complaint may be. In others, she assumes the role of a "mother" where her sympathetic ear listens to the minute accomplishment of an insecure employee, who is ignored by his supervisor; but telling it to an interested nurse serves as a stimulus to work harder and achieve other successes which he can relate to the nurse. As years progressed, unconsciously the successful industrial nurse has learned that treating and bandaging wounds was a small part of her job and that more and more of her duties lie in guiding the employees along the road of good health. This has been achieved to such an extent in some plants that the nurse has been elevated in the organization chart and recognized by industry as an important means of creating a more favorable impression of the company on employees.

Nurses have found in industry a challenge never encountered in hospital practice. They have learned how to use clinical X-ray equipment, do routine blood counts and chemistries, operate E.K.G. and B.M.R. equipment, obtain audiograms and use sound level meters, operate survey meters for radiation contamination, evaluate psychological tests, obtain well-or-

ganized histories from patients, describe injuries, compute accident statistics, and know the intricate details of Workmen's Compensation laws as well as Group Insurance. In some plants nurses are taught and are authorized to suture minor lacerations and in general are permitted more leeway and authority than would ever be permitted in a hospital practice.

Some industrial medical departments maintain elaborate records of their activities even to the extent of using tabulating cards. Such records become valuable in conducting clinical investigation on the use of drugs, protective hand creams and the like. Plant populations are usually constant and offer an ideal media for evaluating drugs as has been done with flu vaccines, anti-histamines, etc. Chemical, drug, cosmetic, and other similar industries rely on their medical departments for research in the toxicology of the products that are being manufactured, since it is the worker who is first exposed and on whom any sensitivity or ill effects will appear.

To those of you who are responsible for industrial medical departments, it is hoped that this paper will serve as a standard with which your own programs may be compared and it may serve as a stimulus toward an aggressive approach to Industrial Medicine. To those of you who have no connection with Industry, it is hoped that this will enlarge your scope of interest and enable you to comprehend the behavior of an Industrial Physician whose actions you were prone to question.

**Department of Health and Welfare
Division of Maternal and Child Health
(Including Services for Crippled Children)
Clinic Schedule — January Through June, 1954**

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: Jan. 11, Feb. 8, Mar. 8, Apr. 12, May 10, June 14.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: Jan. 15, Feb. 19, Mar. 19, Apr. 16, May 21, June 18.

Rumford — Community Hospital, 1.30-3.00 p. m.: Mar. 17, June 16.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Feb. 25, June 24.

Rockland — Knox County Hospital, 1.30-3.00 p. m.: Feb. 18, May 20.

Machias — Normal School, 1.30-3.00 p. m.: Feb. 10, Apr. 14.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.: 1.00-3.00 p. m.: Jan. 12, Mar. 10, May 11.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: Mar. 9.

Fort Kent — Peoples Benevolent Hospital, 10.00 a. m.-1.00 p. m.: Jan. 13, May 12.

**Bangor* — Eastern Maine General Hospital, 1.30-3.00 p. m.: Jan. 28, Mar. 25, May 27.

Augusta — Augusta General Hospital, 1.00-3.00 p. m.: Apr. 22.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: Jan. 29, Feb. 26, Mar. 26, Apr. 23, May 28, June 25.

CLEFT PALATE EVALUATION CLINICS

Portland — City Dispensary, India Street, 10.00 a. m.: Feb. 9, May 11.

PEDIATRIC CLINICS

**Bangor* — Eastern Maine General Hospital, 1.30 p. m.: Jan. 29, Feb. 26, Mar. 26, Apr. 23, May 28, June 25.

**Waterville* — Thayer Hospital, 1.30 p. m.: Jan. 5, Feb. 2, Mar. 2, Apr. 6, May 4, June 1.

**Presque Isle* — Northern Maine Sanatorium, 1.30 p. m.: Jan. 27, Mar. 24, May 26.

*Several of the Pediatric Clinics, and also Bangor CC Clinics, will be two-session clinics.

By Appointment Only

EVALUATION OF A SEDATIVE ANTISPASMODIC PREPARATION IN INDUSTRIAL MEDICAL PRACTICE*

FRANK W. BARDEN, M. D., PAUL S. HILL, M. D., WILLIAM F. MAHANEY, M. D.,
KENNETH J. CUNEO, M. D.

The field of industrial medicine offers exceptional opportunities for observing the early and initial manifestations of diseases and for evaluating the efficacy of those therapeutic agents which are intended to afford symptomatic relief as an emergency measure. Quite frequently a serious disorder is suspected and diagnosed and the patient is referred to his private physician for appropriate medical or surgical treatment.

This service insures the employee of the best of medical care and may be responsible for avoiding complications or even fatal consequences which often follow neglect or delay in instituting early treatment. Many individuals who do not have recourse to the facilities of an industrial clinic are too often reluctant about reporting to their private physician any disorder which may seem of a temporary or moderate nature but place reliance in the family medicine chest or the traditional advice of a friendly neighbor for treatment. The consequence may be a ruptured viscus and peritonitis resulting from an ill-advised cathartic or some other measure intended to cure indigestion.

Because of the relatively high incidence of symptoms referable to the gastrointestinal tract among industrial employees reporting to the infirmary for treatment, it was felt that a critical survey of sedatives, antispasmodics, or combinations of these agents might provide some data upon which to base a clinical impression as to the most effective means of affording rapid relief of symptoms, and in reducing to a minimum unnecessary absenteeism. Since no satisfactory methods for the quantitative estimation of analgesics are available, it was felt that a more reliable and representative impression could be gained through a coöperative study by several specialists whose previous experience with a great variety of spasmolytic agents would qualify and enable them to judge such agents on the basis of their relative clinical effectiveness.

This group comprised two surgeons and two internists, one of the latter (F. W. B.) devoting his time exclusively to industrial practice. Preliminary conferences were held for the purpose of outlining the scope of the study and to establish certain criteria for the evaluation of antispasmodics and sedatives which might prove particularly useful in the treatment of ambulatory patients, including industrial employees.

Some of the principal and important criteria are: Clinical effectiveness, margin of safety, freedom of undesirable effects, convenience of administration and dosage regulation, uniformity of composition, product stability and economy.

It is important to bear in mind at all times that the existence of occupational hazards, whether these be concerned with the operation of production machinery or automobile commuting, requires the utmost consideration in the administration of sedative agents. Of no lesser importance in the evaluation of therapeutic agents is the background of long and extensive clinical usage, since it is only through such experience that the full merits of the drug can be properly estimated. Latent dangers of blood dyscrasias or serious side effects may not be imminent or detectable until after the accumulation of data over long periods of time.

To say the drug is more or less potent than another, or that it causes less reactions in the recommended dosage, is not sufficiently expressive of its true clinical value. The same physiological action that contributes to the therapeutic usefulness may in slightly higher dosage be responsible for undesirable effects. If it were possible, therefore, to summarize into a single criterion those qualities of a drug which represent its true status as a therapeutic agent—that single factor would be THERAPEUTIC INDEX. This is the margin or ratio between effective therapeutic dosage and minimum toxic level.

Notwithstanding the large number of synthetic anticholinergic compounds which have been introduced and intensively promoted for the management of smooth muscle spasticity, the natural belladonna alkaloids are still predominantly the drugs of choice for effectiveness, safety and economy. It has been shown and repeatedly confirmed that appropriate combinations of the natural belladonna alkaloids with phenobarbital exhibit an unmistakable synergistic effect in the relief of smooth muscle spasm without any noticeable additive effect as regards toxicity or undesirable reactions. Because of the extensive use of Donnatal(R) for sedation and spasmolysis, it was considered advisable to employ this preparation in the present study and to compare its effectiveness with previously employed sedatives and also with tincture of belladonna.

Donnatal(R)—Trademark of the A. H. Robins Company, Incorporated—containing in each tablet, capsule and 5 c.c. elixir the following active ingredients:

* From the Medical Department of the Saco-Lowell Shops and the Webber Memorial Hospital, Biddeford, Maine.

Hyoscyamine sulfate	0.1037 mg.
Hyoscine hydrobromide	0.0065 mg.
Atropine sulfate	0.0194 mg.
Phenobarbital (1/4 gr.)	16.2 mg.

This report is based upon a critical survey of thirty-eight patients treated with Donnatal(R) and for whom adequate case records and progress reports were constantly maintained. The study covers a period of approximately eight months.

Epigastric pain, nausea and vomiting were the most prominent symptoms for which the drug was administered. The duration of the gastric disturbance varied from a few days to two years and many of these patients had previously received other medications with varying results.

Gastrointestinal disturbances were the chief complaints of more than fifty percent of all patients reporting to the dispensary for treatment. Many of the patients gave histories of duodenal ulcers. These patients were immediately placed upon Donnatal(R) and instructed to take one tablet three or four times daily, after meals; and antacid therapy was prescribed when hyperacidity was evident. Diet and rest were advocated for the more severe cases.

Satisfactory or complete relief of symptoms occurred rapidly in this group and many employees were able to resume work within an hour. A later check-up examination showed that they had remained free of symptoms. In several instances the patient discontinued treatment and an acute flare-up of the gastric distress resulted. Repetition of the original regimen again brought about complete symptomatic relief.

Several of the female patients with abdominal cramps, nausea and headache associated with menses were given Donnatal(R), and although considerable relief was experienced the results were not nearly so striking as in the gastrointestinal series.

The relief of spasm and nervous tension by Donnatal(R) should not be considered as a substitute for corrective measures when infections or some pathological condition may be responsible for the patient's distress. It is intended to afford symptomatic relief and should be employed in conjunction with other therapeutic agents whenever required.

SUMMARY

1. In industrial practice and in private general practice there exists a wide field of clinical usefulness for sedative antispasmodic preparations.

2. Donnatal(R), a combination of natural belladonna alkaloids with phenobarbital, has been found particularly effective for the relief of pain associated

with smooth muscle spasm of the gastrointestinal tract.

3. More than 85% of patients with epigastric pain and discomfort were rapidly and completely relieved of symptoms.

4. There was no evidence of undesirable side reactions.

5. The uniformity of composition of Donnatal(R), the convenience of dosage regulation, product stability, and economy are factors of considerable importance in the evaluation of therapeutic agents of this category.

The following case reports are typical and representative of the group as a whole:

Case 1. Male, 40 years' old, with a history of myxedema and congestive heart failure. On December 16, 1952, complained of nausea, epigastric pain and vomiting. Donnatal(R) given along with antacids. Condition improved after about one hour and patient returned to work. Similar complaints 4 months later. Again given Donnatal(R) and relief obtained.

Case 2. Male, 44 years' old, 5 ft. 9 inches tall, weight 153 lbs., foundry worker. History of duodenal ulcer. Complained of nausea and vomiting at 7:55 A. M. on August 2, 1952. Bed rest prescribed and given Donnatal(R) 1 tablet t.i.d. Some relief obtained but occasionally had sharp pain in "pit of stomach." Continued to take Donnatal(R), 1 tablet before meals, and on August 6, 1952, has almost complete relief. On August 7, 1952, when questioned, patient stated "Am feeling fine and feel better than I have for a long time." On March 3, 1953, patient again seen and again given Donnatal(R) plus Robalate(R) with complete relief from nausea and vomiting. On June 5, 1953, patient again complained of epigastric pain with nausea and vomiting, again given Donnatal(R) plus Robalate(R). On June 19, 1953, complained of nausea only, no pain; given Robalate(R) only. Complete relief obtained.

Robalate(R)—Trademark of the A. H. Robins Company, Incorporated—containing in each tablet 0.5 Gm. of dihydroxy aluminum aminoacetate.

Case 3. Female, 49 years' old, nervous, high-strung individual, 5 feet 10 inches tall, weight 127 lbs. Employed as secretary. On June 6, 1952, complained of nausea and vomiting, put to bed and Donnatal(R) given and repeated in 1 hour. After about 2 hours obtained relief and returned to work. On subsequent visits to the Dispensary she made requests for Donnatal(R).

The Journal of the Maine Medical Association

THOMAS A. FOSTER, M. D., Portland, Editor

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EDITORIAL SECTION

Material Support

The New Year, 1954, finds our Association of medical gentlemen well organized and started on its second hundred years of service.

The devotion, industry and loyalty of our predecessors established for us a praiseworthy record of accomplishment. They maintained by their unselfish and determined efforts a medical association; "the object of which is mutual professional improvement, cultivation of friendly intercourse between its members, faithful support of regular and honorable practice . . ."

We inherit the fruits of their careful planting and watchful cultivation. And we inherit the responsibility of preserving these good fruits. In order to fulfill our responsibilities we require spiritual and material support from all our members.

Now is a time to rally with material support. Statements for 1954 State and County dues are being sent out by the County Secretaries, who will greatly appreciate prompt and cheerful payment. Following the notices for State and County dues will be state-

ments for A.M.A. dues, which will be mailed from the State Secretary's office. A good deal of clerical work is involved in these procedures and early payment helps all along the line. With the A.M.A. dues is included subscription to *The Journal of the American Medical Association*. However, if a Specialty Journal is preferred in place of the A.M.A. Journal, name of the Journal may be indicated when sending the check to the Maine Medical Association.

Inasmuch as there still seems to be some confusion concerning A.M.A. dues, we do want to emphasize here that your check for State and County dues is payable to your County Secretary and your check for A.M.A. dues payable to the Maine Medical Association.

We believe that the individual physician needs the Association and we know that the Association needs you, the individual physician. The Secretaries will enjoy and appreciate your coöperation in this phase of your support.

The Tobacco Question

In the past three years many investigations have produced evidence that tobacco smoking is associated with bronchiogenic carcinoma. In March, 1953, Wynder and Cornfield published in the *New England Journal of Medicine* an article of special interest to practicing physicians entitled, "Cancer of the Lung in Physicians." The data was accumulated through a questionnaire and explanatory letter to the estates of physicians who had died from cancer of the lung,

colon, stomach, kidney and bladder, leukemia, lymphoma and sarcoma.

Of 118 letters sent to physicians who had died of pulmonary cancer 11 were returned unopened, of those delivered, 63 were completed and returned, thus 58.9% of the letters to patients with cancer of the lung were returned.

The study produced evidence of a statistical nature which agreed with previous investigations by Wynder

and Graham in this Country and the article by Doll and Hill published in the *British Medical Journal* in 1950. It indicated that patients with cancer of the lung smoked much more heavily than patients who died from other types of cancer. Up to the present time the careful investigations of well qualified physicians agree that cancer of the lungs is on the increase and that it is found in heavy smokers.

Reports based on material which has developed from many careful surveys certainly is not "loose talk." It is sensible talk and it is deserving of painstaking pure research. The fact that the article, entitled "Tobacco Smoking as a Possible Etiologic Factor in Bronchiogenic Carcinoma," published by Wynder and Graham in the *A. M. A. Journal* for

May 27, 1950, and the article by Levin, Goldstein and Gerhardt under title, "Cancer and Tobacco Smoking," appearing in the same issue of the *Journal*, arrived at similar conclusions three years ago show that the medical profession has not rushed into print on the subject.

The studies emphasize the importance of accurate thorough histories, thus presenting to the general practitioner a challenge to take time for a good talk with his patient. The data accumulated from searching and intelligent histories of all patients furnishes leads to the road of many unsolved problems. Medicine has a place now as always for the clear, accurate, revealing history of the patient.

GROUP HEALTH AND ACCIDENT INSURANCE FOR DOCTORS

For some time I have been interested to see that all the doctors in Maine should have available a group accident and health insurance policy with income protection. Some of the advantages of such group insurance are:

The premiums are substantially less.

No physical examination or statement of insurability is required during a certain initial period.

No individual's policy can be cancelled unless the policies of all members of the group are cancelled.

The desirability of these benefits are self evident. It is equally obvious that group benefits are not available unless there is group action. Many state medical societies after a study of policies offered have endorsed the plan of one company and recommended it to their members.

Here in Maine two counties had separately endorsed county group policies for their members viz. Cumberland and Penobscot. Joined with the Penobscot group were Piscataquis, Hancock and Knox. These groups were formed in 1944-46 and fortunately for the formation of a state group, both chose the policy of the same company, the Commercial Insurance Company of Newark, New Jersey.

During the past year or so some other insurance companies have discussed with me the desirability of such insurance for all the members of the Maine Medical Association who desired it. This office had only the most fragmentary information concerning the groups already formed. Discussion of the subject with two or three county societies was not particularly useful except that it showed:

1) That those who had the Commercial Insurance Company policies would not give them up to form a new group.

2) That some of the small county societies did not have enough members to form a group by themselves.

3) That formation of a state group would be difficult or impossible since two of the county societies already covered were two of the most populous, medically, in the State.

When the Commercial Insurance Company already covering five counties decided to try to make its coverage state-wide it seemed to me to be most fortunate. I knew that their group policy would be as advantageous as any that could be offered because the Maine State Bar Association had accepted it recently after a competent committee of insurance lawyers had approved it. This company would be in a position to combine the counties already covered with the other counties in a state group.

When the agents representing that company discussed the proposed extension of coverage I suggested that the whole matter be laid before the Council of the Maine Medical Association. I arranged for the representative of the company to appear before the Council at its meeting in Bangor on October 25. The information presented herein was given to the Council and that body adopted the following vote:

Voted: "That the Council approve the plan and that a letter to this effect be sent to every member of the Association over the President's signature."

In order that new doctors may have this coverage, if they desire, any doctor not over 60 years of age hereafter becoming a member of the State Association may within forty days of such membership submit his application to this insurance company and they are bound to accept him.

The following agencies and the counties they have charge of are :

H. F. Scott, 61 Main Street, Bangor, Maine

Penobscot

Piscataquis

James B. Longley, 14 Lisbon Street, Lewiston, Maine

Androscoggin

Hancock

Knox

Dow & Pinkham, 107 Exchange Street, Portland, Maine

Aroostook

Cumberland

Franklin

Kennebec

Lincoln-Sagadahoc

Oxford

Somerset

Waldo

Washington

York

W. MAYO PAYSON,

Executive Secretary.

CENTENNIAL SESSION

of the

PENOBSCOT COUNTY MEDICAL SOCIETY

The Centennial Session of the Penobscot County Medical Society will be held in the Bangor House, Bangor, Maine on Monday, February 15, 1954.

Program

5:00 P. M. SOCIAL HOUR

7:00 P. M. BANQUET

Speakers :

Judge Raymond Fellows

Albert W. Fellows, M. D.

Harry Butler, M. D., Chairman Centennial Committee

Herbert C. Scribner, M. D., Secretary

COUNTY SOCIETIES

Androscoggin

President, William Spear, M. D., Lisbon Falls
Secretary, Norman O. Gauvreau, M. D., Lewiston

Aroostook

President, Clement L. Donahue, M. D., Caribou
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Eugene E. O'Donnell, M. D., Portland
Secretary, Stanley C. Herrick, M. D., Portland

Franklin

President, Harry Brinkman, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, Mason Trowbridge, Jr., M. D., Ellsworth
Secretary, Arthur M. Joost, Jr., M. D., Bucksport

Kennebec

President, Kurt A. Sommerfeld, M. D., Gardiner
Secretary, Arch H. Morrell, M. D., Augusta

Knox

President, Oram R. Lawry, Jr., M. D., Rockland
Secretary, Barbara G. Luce, M. D., Rockland

Lincoln-Sagadahoc

President, Samuel L. Belknap, M. D., Damariscotta
Secretary, John P. Goodrich, M. D., Boothbay Harbor

Oxford

President, Thomas P. Nangle, M. D., West Paris
Secretary, Dexter E. Elsemore, M. D., Dixfield

Penobscot

President, Magnus F. Ridlon, M. D., Bangor
Secretary, Herbert C. Scribner, M. D., Bangor

Piscataquis

President, Albert M. Carde, M. D., Milo
Secretary, Francis W. Bradbury, M. D., Dover-Foxcroft

Somerset

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Secretary, Karl V. Larson, M. D., East Machias

York

President, Frank W. Barden, M. D., Biddeford
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Hancock

The annual meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, Maine, December 9, 1953. There were 11 members and 4 guests present.

The meeting was opened by the president, Dr. Herbert T. Wilbur.

The following officers were nominated and elected for the year 1954:

President, Mason Trowbridge, Jr., M. D., Ellsworth.
Vice President, Charles H. Knickerbocker, M. D., Bar Harbor.

Secretary-Treasurer, Arthur M. Joost, Jr., M. D., Bucksport.

Censor, Hyman Millstein, M. D., Southwest Harbor.

Karl V. Larson, M. D., District Councilor, spoke briefly on new forms to be used in dealing with VA cases and other matters.

Donald F. Bridges, M. D., of Bangor, the speaker of the evening, gave a very interesting informal talk covering Selected Topics on Obstetrics.

State of Maine

Board of Registration of Medicine

Adam P. Leighton, M. D., 192 State Street, Portland, Secretary.

List of Physicians Licensed to Practice Medicine and Surgery in the State of Maine, November 13, 1953.

Through Examination

Ake Akerberg, M. D., 150 Fifth Ave., New York 11, N. Y.
Albert L. Babcock, M. D., Hartford Hospital, Hartford, Conn.

Arthur K. Carton, M. D., P. O. Box 225, St. Stephen, N. B.

Robert F. Ficker, M. D., Kennebunkport, Maine.

LeRoy P. Houck, M. D., 9 Lowell Street, Concord, Mass.
Gerard B. Martin, M. D., Evergreen Park, Illinois.

James V. I. O'Sullivan, M. D., 179 Bay State Road, Boston 15, Mass.

Raimunds Pavasars, M. D., Pownal State School, Pownal, Maine.

Elsa Shapira, M. D., 21 Pine Street, Old Town, Maine.

Patrick R. Staunton, M. D., Prairie Ave., Chicago, Ill.

Winston G. Stewart, M. D., 90 Gainsborough Street, Boston, Mass.

Ladislas D. Wojcik, M. D., 68 Myrtle Street, Boston, Mass.

Through Reciprocity

Hugh T. Bigg, M. D., Eastport, Maine.

Louis Bove, M. D., Hartford Hospital, Hartford, Conn.

Elizabeth B. Connell, M. D., Blue Hill, Maine.

John T. Connell, M. D., Blue Hill, Maine.

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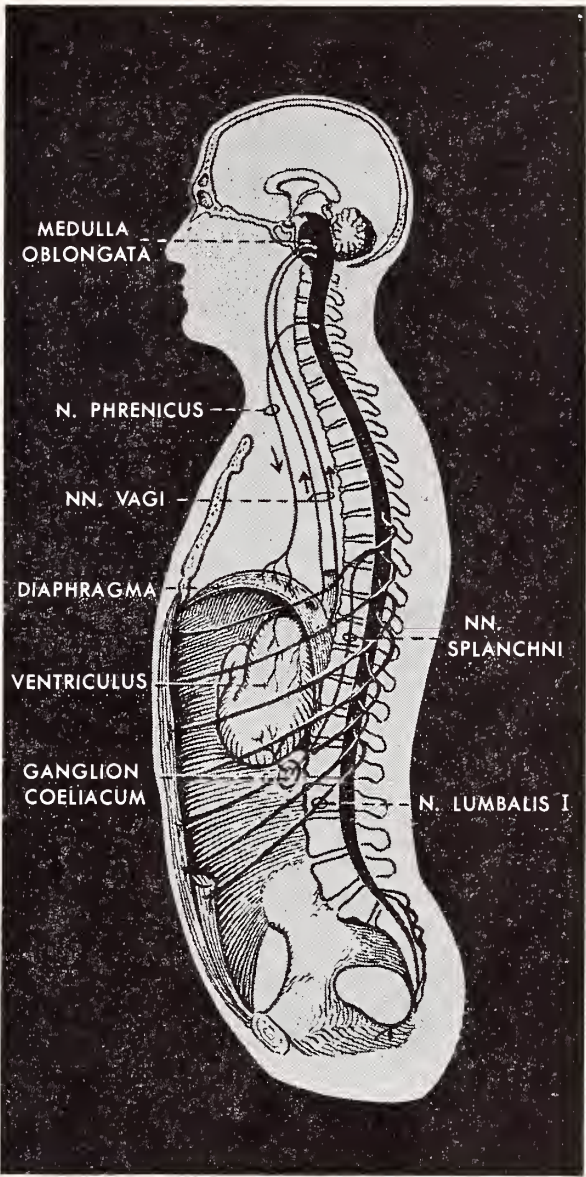
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1. Keats, S.: Ataxic Cerebral Palsy with Akinetic Seizures: Dramatic Response to Dramamine, *J. M. Soc. New Jersey* 50:53 (Feb.) 1953.
2. Council on Pharmacy and Chemistry: New and Nonofficial Remedies, 1953, Philadelphia, J. B. Lippincott Company, 1953, p. 471.



THE VOMITING REFLEX: Vagus→nodose ganglion→solitary tract→spinal cord→cervical, thoracic and lumbar nerves to diaphragm, cardiac sphincter, stomach, abdominal and pelvic musculature. (After Krieg, W. J. S.: *Functional Neuroanatomy*, ed. 2, New York, The Blakiston Company, Inc., 1953, p. 104.)

SEARLE *Research in the Service of Medicine*

TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

The Age Relationship of Cases of Pulmonary Tuberculosis and Their Associates

By Arthur B. Robins, M. D., American Journal of Public Health, June, 1953.

The most significant recent trend in the epidemiology of tuberculosis is the degree to which the disease is affecting older people, particularly older men. In 1932, 37 per cent of the deaths from pulmonary tuberculosis in New York City occurred in individuals 45 years and over, and 78 per cent of these deaths were among males. At this time only one-quarter of the newly reported cases of pulmonary tuberculosis developed in this age group, and less than one-fifth among older men.

By 1950, less than 20 years later, the proportion of new cases and deaths from pulmonary tuberculosis occurring in persons 45 and over had doubled. More than 65 per cent of the residents of New York City who died of the disease were 45 and over, and men were responsible for 85 per cent of these deaths. Similarly, almost half of the newly reported cases of pulmonary tuberculosis were now found in people 45 and over, and males in this age group contributed 36 per cent of all new cases.

During this same period a sharp decline in the percentage of children reacting to the tuberculin test was noted. The mortality from all forms of tuberculosis in persons under 10 years of age reached an all-time low. A major factor in these reductions was undoubtedly the decrease in tuberculous infection in the community. This decline can be attributed to the presence of fewer communicable cases of the disease, their more effective isolation, and the increased resistance of exposed individuals resulting from their improved standard of living. In addition, another possible explanation of the much sharper decline in tuberculous infection in childhood presents itself. Could fewer children under 10 have been exposed to household infection during recent years because source cases were older and less likely to have younger children living with them?

To test this hypothesis a study of the households of persons with pulmonary tuberculosis first reported in 1950 was undertaken. Only male index cases were included, since it had been demonstrated that the postponement of the age of peak morbidity and mortality from tuberculosis was due primarily to the shift toward the older ages in males. A sample of 778 cases was selected at random from the total of 3,467 men more than 25 years old with pulmonary tuberculosis reported for the first time in 1950. The results may be summarized as follows:

1. Study of representative samples of the households of males 25-44 years of age with pulmonary tuberculosis and those 45 and over, reported in New York City in 1950, reveals characteristic variations in their composition.
2. Older individuals with tuberculosis have fewer household members, and their associates are less frequently under 10 years of age, than younger persons with the disease.
3. These differences may have been a major factor in the relatively greater reduction in tuberculous infection, morbidity, and mortality in childhood over the past 20 years.
4. This factor may contribute materially to the rapid rise in the incidence of tuberculosis which occurs in adolescents and young adults.

The observations show some of the effects produced by the shift in tuberculosis morbidity to the older ages, particularly in men. As previously mentioned, the proportion of new cases reported in males 45 and over has doubled in less than a generation. Not only is pulmonary tuberculosis more frequent in older men, but it is also in a more advanced stage at the time of discovery. Fifty-six per cent of males 45 and over, compared with less than 40 per cent of men 25-44,

newly reported as tuberculous in New York City in 1950, had far advanced disease at the time of report. The difference in the number of associates exposed to massive infection in the households of the two groups was even greater.

As a result of these differences the risk of tuberculous infection in certain segments of the population has been materially altered. The danger of contagion has become greater for the associates of older patients, and less for the associates of younger patients of tuberculosis. This statement applies particularly to the immediate households of tuberculous individuals. Study of such households show that they vary in several important respects. Parents and siblings make up a larger proportion of the associates of male patients, 25-44 years of age, than of the associates of older men with the disease. Descendents of all ages are somewhat more frequently present in the homes of patients 45 and over. On the other hand, if consideration is given to the size of the household, a different picture is presented. Two-thirds of the older men with tuberculosis are without household associates, or list only one, presumably a spouse. By contrast, 53 per cent of the younger patients have no, or only one, household contact. The sample studied contains an average of 1.9 household associates for each male patient with tuberculosis under 45, and 1.4 household associates for each 45 and over at time of report.

The aspect of the subject of greatest interest is the age of the associates in relationship to the age of the index case. Comparison of the households of the two groups of patients indicates a marked concentration of young children in the homes of younger men with tuberculosis. When marital partners are excluded, more than 37 per cent of the associates of the younger group are under 10 years of age, which is more than twice the proportion of children found among the associates of males 45 and over. Individuals between 10 and 34 form a significantly greater part of the households of older patients, primarily as a result of the large number of 15- to 24-year olds included among them. The same trends, with minor variations, characterize the age distribution of male and female household members considered separately.

The implications of these findings in the epidemiology of tuberculosis are far-reaching. There is general agreement that the level of tuberculous infection in the community has become lower during the past 20 years as a result of the reduction in the number of communicable cases. A more rapid decrease in the extent of the tuberculosis problem in children has also been noted, but no adequate explanation for it has been advanced. This study would suggest that the relationship between the age of household associates and tuberculosis may be the major factor responsible.

It has been demonstrated that a selective reduction in the opportunities for exposure of young children accompanies the aging of the tuberculous population. Its superimposition on the universal drop in infection could readily account for the phenomenal recent decline in the percentage of tuberculin reactors under 10 years of age. The same influence would also lead to a relatively increased risk from tuberculosis among adolescents and young adults. Having escaped contact with the tubercle bacillus in childhood, they would be more apt to encounter it for the first time between 10 and 34. The sharp rise in the incidence of new cases characteristic of this age group may well be a reflection of the greater morbidity which follows the resulting primary infections in adult life. There is reason to believe that the relationship between the age of associates and tuberculosis will be a factor of growing importance in tuberculosis.

(The printing of Tuberculosis Abstracts is made possible by the cooperation of your local tuberculosis and health association.)

* From Vol. XXVII, January, 1954, No. 1.

MAINE MEDICO-LEGAL SOCIETY
Semi-Annual Meeting

**Conference on Medical-Legal Techniques in the Investigation and
Prosecution in Cases of Violent and Suspicious Deaths**
Eastland Hotel — Portland, Maine
February 4-5, 1954



Dedicated

to

GEORGE L. PRATT, M. D.

Farmington, Maine

Father of the Maine Medico-Legal Society

Aside from his duties as a practicing physician, Dr. "George", who was graduated from Bowdoin Medical School in June, 1904, has served in many capacities in the promotion of medicine here in Maine since the turn of the century. He has served as Secretary of the Maine Medico-Legal Society since its formation in 1935.

PROGRAM

Thursday, February 4, 1954

First Session

- 8.30 A. M. Registration—Mezzanine
- 9.00 A. M. Welcome—Hon. Alexander A. LaFleur,
President, Maine Medico-Legal Society, Attorney General, Maine
Presiding Officer: Hon. Benjamin Butler,
Farmington
- 9.15 A. M. **Round Table on Law Enforcement and
the Crime Problem**
Discussion Leader: Hon. Gordon M. Tiffeny, Former Attorney General,
New Hampshire
Hon. James P. Archibald, Houlton
Hon. Harold J. Rubin, Bath
Hon. Daniel C. McDonald, Portland
- 10.30 A. M. **Round Table on Use of Habeus Corpus**
Discussion Leader: Hon. William E. Powers, Attorney General, Rhode
Island
Hon. James G. Frost, Gardiner

Second Session

- 1.30 P. M. **Round Table on Concepts of Limited Re-
sponsibility**
Discussion Leader: A. Warren Stearns,
M. D., Former Dean, Tufts Medical
School
Francis H. Sleeper, M. D., Augusta
Harold A. Pooler, M. D., Bangor

- 3.00 P. M. **Cases of Probable Suicide in Young Per-
sons without Obvious Motivation**
A. Warren Stearns, M. D.
- 4.30 P. M. **Medicolegal Investigation of Abortion**
Michael A. Luongo, M. D., Instructor
of Legal Medicine, Harvard Medi-
cal School

Third Session

- 7.00 P. M. **Round Table on Medical-Legal Advance-
ment Since the Turn of the Century**
Discussion Leader: George L. Pratt,
M. D.
D. M. Stewart, M. D., South Paris
John G. Towne, M. D., Waterville
Arch H. Morrell, M. D., Augusta
Romeo A. Beliveau, M. D., Lewiston
Oscar F. Larson, M. D., Machias
Stephen A. Cobb, M. D., Portland
William Holt, M. D., Portland
Charles W. Kinghorn, M. D., Kittery
Walter S. Stinchfield, M. D., Skowhegan
- 8.00 P. M. **Medicolegal Toxicological Problems**
Walter W. Jetter, M. D., Professor
Legal Medicine, Boston University
School of Medicine

over

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Fourth Session

Presiding Officer: Hon. Alexander A. LaFleur

9.00 A. M. Round Table on The Use of Circumstantial Evidence

Discussion Leader: Hon. George C. Way, Justice, Connecticut Supreme Court

9.30 A. M. Round Table on The Trial of a Criminal Case

Discussion Leader: Hon. George Fingold, Attorney General, Massachusetts

Fifth Session

1.30 P. M. The Art of Interrogation and Investigation

Thomas McLaughlin, Special Agent, F.B.I., Boston, Massachusetts

2.30 P. M. Round Table on The Problems the Medical Examiner Faces

Discussion Leader: Richard Ford, M. D., Director, Department of Legal Medicine, Harvard Medical School

Joseph E. Porter, M. D., Portland

Richard C. Wadsworth, M. D., Bangor

Irving I. Goodof, M. D., Waterville

Romeo A. Beliveau, M. D., Lewiston

Friday Evening

6.00 P. M. Banquet—Eastland Hotel Ballroom

7.30 P. M. Presiding Officer: Hon. Alexander A. LaFleur

Salute to the Flag

Convocation—Rev. Howard O. Hough

Introduction of Guests

Hon. Edward F. Merrill, Skowhegan, Chief Justice, Maine Supreme Judicial Court

Address: A New Look at State and Federal Crime Problems

Hon. Eugene Cook, President, Attorneys General Association of the United States, Attorney General, Georgia

Closing Remarks—Governor Burton M. Cross

Benediction—Rev. Howard O. Hough

Evening proceedings are to be broadcast and televised.

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The Journal of the Maine Medical Association

Volume Forty-Five

Portland, Maine, February, 1954

No. 2

ANGINA PECTORIS ASSOCIATED WITH MYXEDEMA*

FREDERIC B. CHAMPLIN, M. D., Waterville, Maine

It is well established that myxedema affects the heart and circulation. This is evidenced by decreased cardiac output, prolonged circulation time, and diminished circulatory plasma and total blood volumes. Advanced coronary atherosclerosis, associated with myxedema, has been responsible for the development of angina pectoris, coronary occlusion and myocardial infarction.

Angina pectoris more commonly develops in patients with myxedema after thyroid medication has been established. This has been attributed to the elevated basal metabolic rate and to the resulting increased cardiac work load. Conversely, it is rare for angina pectoris associated with myxedema to subside under thyroid therapy. Mussio Fournier¹ cites but six cases in the literature. Friedberg² is convinced that these cases represent an obscure group. He proposes that the chest pain in these cases might have reflected a disease process other than angina pectoris. The following case seems worthy of reporting in view of the typical clinical, electrocardiographic and roentgenologic picture, and the unusual clinical course following institution of thyroid therapy.

This 59-year-old white woman first became ill in April, 1949. She was hospitalized for a "fainting spell" which persisted for two days and required oxygen therapy by tent for three days. The diagnosis on discharge from the hospital was "pernicious anemia." Because of persistent lassitude, sensitivity

to cold, and frequent "fainting spells" with momentary loss of consciousness she was admitted to a Boston Clinic in May, 1949. A high blood cholesterol and electrocardiographic changes considered typical of myxedema were discovered. X-ray of the chest showed no cardiac enlargement. X-ray of the skull was reported as being normal. The blood counts revealed a slight anemia. Striking improvement followed treatment with $\frac{1}{4}$ grain of thyroid, three times a day. The patient stated that she became more energetic and was no longer intolerant to cold. In March, 1950, while on board a ship sailing to Europe, she developed frequent "fainting attacks" with momentary loss of consciousness. She was advised by the ship's physician to discontinue the thyroid medication. She developed frequent attacks of vertigo, shortly after returning to the United States, particularly while working in her garden. Anorexia and lassitude became more prominent. She developed left precordial pain, radiating through to the back, which occurred at rest and prior to the onset of vertigo. At about this time she noted lower retrosternal pain, radiating to the suprasternal notch, brought on by exertion and relieved by resting. Although exertional dyspnea and palpitation became increasingly noticeable, orthopnea was never present. Edema of the feet and ankles was accompanied by a gradual weight increase from 155 to 215 pounds. She became discouraged and noticeably depressed. In November, 1951, believing that her situation was hopeless,

* From the Thayer Hospital, Waterville, Maine.

she took an overdose of phenobarbital. This resulted in a profound sleep for two days. Friends commented on the puffiness of her face, eyelids and hands. Her skin was described as dry and scaly and her hair was brittle and falling out.

She first came to the writer's attention January 16, 1952. She was complaining of depression, increasing exertional dyspnea, retrosternal pain, and swelling of the feet and ankles.

The past history included diphtheria and scarlet fever as a child; bilateral mastoidectomies in 1915 with subsequent marked impairment of hearing, compensated somewhat by a hearing aid; tonsillectomy in 1931 with considerable postoperative hemorrhage for three days. One pregnancy in 1918. She was born in England, the 9th of 23 siblings. Her mother died at 83 of heart disease and diabetes. A review of systems disclosed an allergy to potatoes with the production of a pruritic rash about the elbows. She experienced a feeling of epigastric fullness, accompanied by belching, when she ate corn, bacon, butter or fried foods. No history of nausea, vomiting, biliary colic, jaundice, tarry or bloody stools. Menopause at age 54. No bleeding or spotting since. She drank an occasional cocktail and smoked 10 cigarettes daily.

Physical examination revealed an obese woman who appeared older than her stated age. Her face, eyelids and hands were puffy and her expression was dull. There was retardation of thought, speech and motion. Her skin was dry, cool, thickened, and scaly. Hair was dry, coarse, and brittle. Eyebrows were scanty. The eyes were remarkable only for narrowed and tortuous retinal arterioles and A-V nicking. Both ears revealed dull, retracted tympanic membranes. Bilateral mastoidectomy scars were present. Hearing was practically non-existent without the use of a hearing aid. The nasal mucous membranes were pale, with a violaceous color, suggesting a nasal allergy. The thyroid gland was not palpable. The left cardiac dullness was percussed at the anterior axillary line. The P.M.I. was not seen or felt. The rhythm was regular. The heart sounds were distant. There were no murmurs audible. The apical rate and radial rate equalled 64/minute. Blood pressure was 180/120 in the left arm and 150/96 in the right arm. The hands were puffy and there was non-pitting edema of the feet and legs. The deep tendon and superficial reflexes were hypoactive. The plantar response was normal. The remainder of the examination was considered normal.

Laboratory data: R.B.C. 4,880,000, Hgb 14.3 Gm.; W.B.C. 8,250 with 69% polys, 24% lymphs, 5 eos., and 2% basos.

Blood Kahn and Hinton tests were negative. Urinalysis was within normal limits. B.M.R. — 22%.

Serum cholesterol 500 mg.%. Circulation time (arm-tongue: Decholin) 22 seconds.

Course: 15 mg. of thyroid were started daily on January 22, 1952, and this amount was increased by 15 mg. each week until a total of 0.1 gm. daily was reached.

During the next six months she improved to the point where evidence of her disease was difficult to detect. There was no further dyspnoea or chest pain.

By September 22, 1952, she was relatively asymptomatic. She had spent a very active summer working about her home and also caring for a large garden. Practically every day she climbed a 45 degree slope from the garden to her house without experiencing chest pain or dyspnea. She weighed 174 pounds. The blood pressure in the left arm was 144/100 and the heart rate at the apex was 80/min. and regular. The area of left cardiac dullness was percussed just outside the midclavicular line. There was no edema of the feet and ankles.

She was not seen again until November 25, 1953. She had been losing weight and was shaky. Approxi-



Figure 1

Chest X-rays: Taken January 16, 1952.

mately three weeks before, as she sat down to dinner, she “fainted” and was unconscious for two hours. She had two similar attacks a week apart which were of shorter duration, and followed rather strenuous exertion. There was no history of convulsive movements, tongue biting, or incontinence. It was learned that she had increased thyroid to 0.3 Gm. daily about one year before and within three months had developed a new set of symptoms. She was unduly fatigued by the slightest work and was intolerant to heat. She noted the general onset of palpitation of the heart, especially at night, and rather marked tremor of her hands. She had worked hard during the summer months without experiencing retrosternal pain, but exertional dyspnea was becoming evident by September, 1953.

Examination revealed a warm, moist, smooth skin. There was poor convergence of the eyes. There was no lid-lag. The lungs were clear to percussion and auscultation. The heart was not enlarged. The apical

rate was 96/min. and regular. The P.M.I. was present in the 5th I.C.S. in the mid-clavicular line. A forceful impulse was felt. A faint systolic murmur was audible at the apex. The blood pressure at this time was 220/108 in the left arm and 180/100 in the right arm. There was a pronounced tremor of the outstretched hands. Weight with clothing was 171 pounds.

DISCUSSION

This patient presented the classical symptoms, clinical signs, and laboratory findings of myxedema. It was also obvious that we were dealing with the problem of “myxedema heart” as evidenced by an increase in the heart size on clinical and X-ray examination. (Figure 1); distant heart sounds by auscultation; low voltage of all complexes of the electrocardiogram with low, flat or inverted T. waves in various leads and lengthening of the QT interval; and the reversibility of these changes to normal while under treatment with thyroid medication. (Fig. 2)

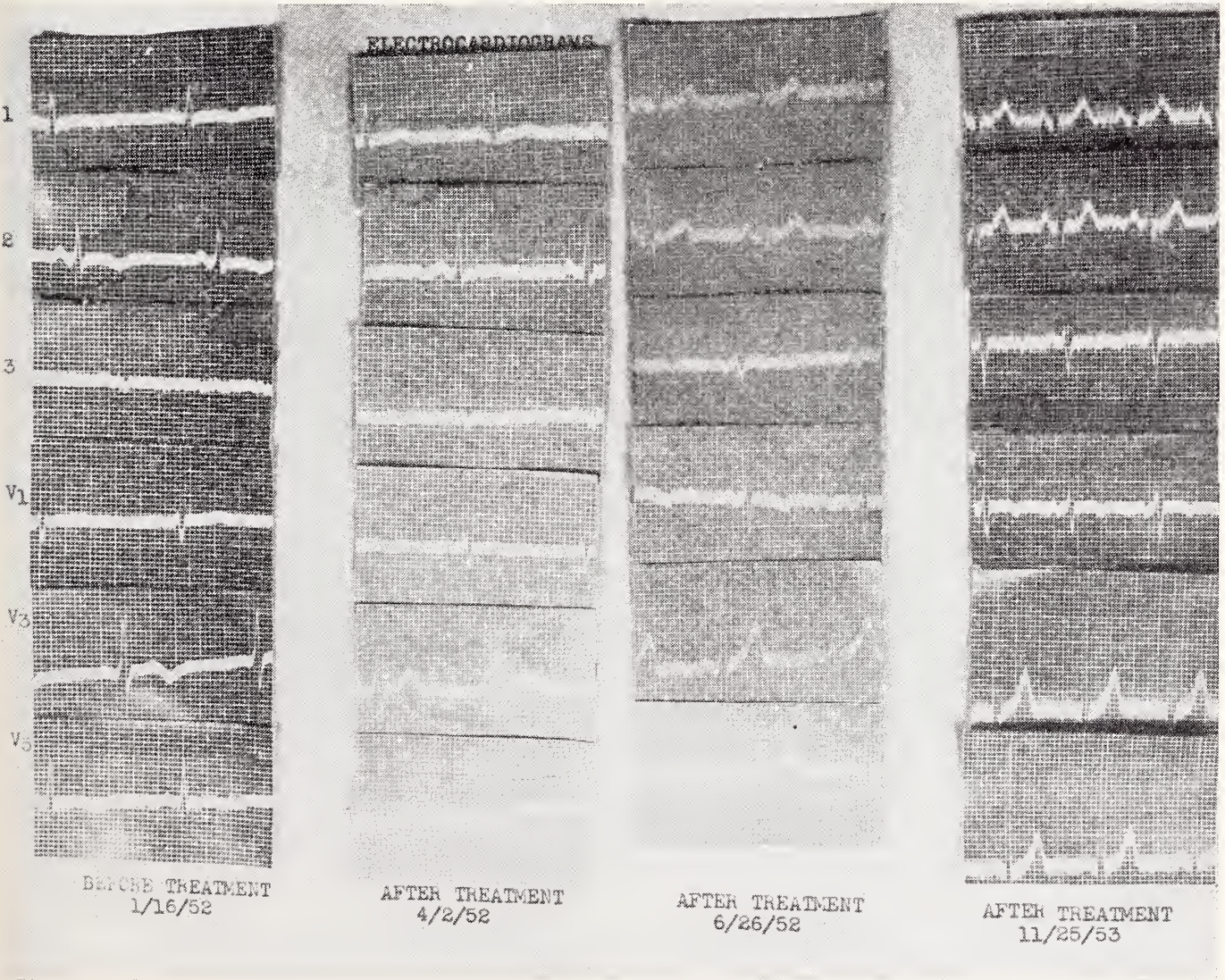


Figure II

Electrocardiograms reveal progressive increase in the amplitude of all complexes, particularly the R. and T. waves. All inverted T. waves became upright. The QT time has become shortened. All tracings standardized at 1 milli volt.

The initial dose of thyroid was small and was cautiously and slowly increased. This was done to prevent the possible development of left ventricular failure which may follow a too rapid increase in the metabolic rate. Levine³ points out that it may be necessary to maintain a patient at a slightly hypothyroid level if angina pectoris should develop while thyroid is being administered. Contrary to the more usual response in patients with symptoms of coronary insufficiency, we were surprised to find the subsidence of angina pectoris in this patient shortly after thyroid medication was started. It was also surprising to find that there had been no recurrence of the retrosternal pain when symptoms and signs of thyroid overdosage developed. It might be presumed that the etiology of the angina pectoris was not so much the coronary atherosclerosis as the abnormal

relationship between blood flow and oxygen consumption as pointed out by Ellis et al.⁴

SUMMARY

A case of myxedema with angina pectoris has been reviewed. The response to a low dose and subsequently a large dose of thyroid was striking and contrary to the usual pattern observed in patients with "myxedema heart" and coronary insufficiency.

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3. Levine, S. A.: *Clinical Heart Disease*, 4th ed., Philadelphia, Saunders, 1950.
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RHINOLITHIASIS—REPORT OF A CASE UNRECOGNIZED FOR TWENTY YEARS*

FREDERICK T. HILL, M. D., Waterville, Maine

While rhinolithiasis is not a common finding, its possibility should be kept in mind in all cases of unilateral nasal obstruction associated with foul smelling discharge. This condition must be differentiated from foreign body (usually in young children), infections, chronic sinusitis, malignancy and osteomyelitis.

While nasal calculi may vary in size, most of those reported have been large, weighing up to 80 gm. They usually are formed around some small foreign body which serves as a nidus. While usual examination supplemented by the use of a probe may reveal the diagnosis, often this condition is not suspected until a roentgenogram reveals an opaque substance in the nasal chamber.

The following case is reported because the diagnosis had not been entertained, despite a history of obstruction and foul discharge for 20 years, until X-rays, taken following an automobile accident, showed such an opaque body.

M. S., a woman, age 73, was referred to us with a diagnosis of foreign body in the nose. She had been seen in another hospital following an automobile accident, where X-rays of her skull revealed a large opaque mass in the right nasal cavity. As her upper denture had been broken as a result of the accident, the mass had been interpreted as a portion of the denture forced into the posterior choanae, via the nasopharynx. The patient gave a past history of fracture of the nose 20 years before, since which time she had had right-sided nasal obstruction and foul-smelling discharge. Other than for one attack of

respiratory infection, for which she had refused all medical attention, her health had been good. She had not seen any physician during these 20 intervening years.

Examination showed ecchymosis under both eyes but orbital margins smooth. There was an external bowing deformity of the nasal arch but no evidence of recent fracture. The nasal septum was markedly deviated to the left and there was a foul, purulent discharge filling the right nasal cavity. The mouth was edentulous and the pharynx and nasopharynx negative except for post-nasal discharge, and there was no evidence of trauma in the soft palate.

The X-rays which the patient brought with her were excellent and careful examination of these showed what appeared to be laminations in the opaque mass, which we considered highly suggestive of rhinolith.

Clearing the nose of the purulent discharge revealed a large gray mass filling the deep part of the right chamber. A probe met with solid resistance. This was firmly impacted in the surrounding soft tissues.

Removal was effected under local anesthesia by inserting a long Killian nasal speculum and grasping the rhinolith with a Knight forceps. This was somewhat difficult as the mass was pyramidal in shape with its base posterior and a sharp narrow margin presenting anteriorly. However, using the blades of the speculum to retract the inferior turbinate laterally the forceps were engaged over the widest part of the calculus and it was removed through the anterior nares. The mass measured 6 x 4 c.m. Inspection of

* From the Thayer Hospital, Waterville, Maine.

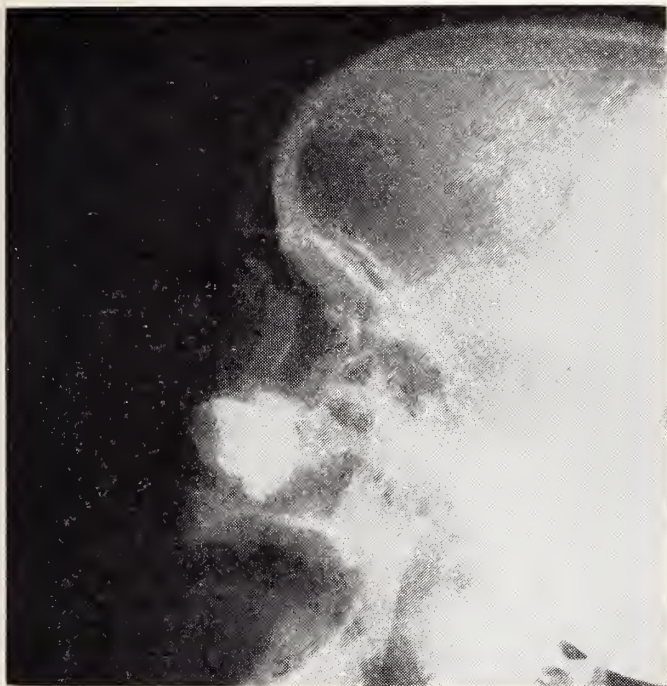


Fig. 1. Lateral roentgenograms show large rhinolith in nasal cavity.



Fig. 2. Anterior-posterior roentgenogram of rhinolith showing characteristic laminations.

the nose after removal showed some pressure necrosis of the inferior turbinate due to the long sojourn of the calculus.

In all probability this rhinolith had its origin in the nasal fracture 20 years before when some bit of foreign matter must have entered the nose. Because of the patient's fear of doctors this probably would have gone unrecognized and unrelieved, despite what

must have been annoying symptoms, except for this second accident.

CONCLUSION

Rhinolithiasis should be considered in all cases of unilateral nasal obstruction associated with foul discharge. Careful inspection of X-ray films may show laminations in opaque masses which should be suggestive of calculi.

OBSERVATIONS ON SURGERY OF THE GALLBLADDER*

L. ARMAND GUTE, M. D., Waterville, Maine

Surgery of the gallbladder has become a popular subspecialty, and is being carried out with increasing frequency by surgeons of varied capabilities. There are many possible difficulties and complications which must be kept in mind, a few of which will be mentioned in this discussion.

Cholelithiasis is a common disease. A study of its incidence reveals an average of 6-10 per cent of the population, with figures up to 30 per cent in a selected older age group. There is very little variation of opinion as to the management of this disease surgically. Arriving at a definite diagnosis appears to be the stumbling block.

A definite history of biliary colic with X-ray evidence of stones is conclusive. Those cases not showing these findings contain many pitfalls. The history may be misleading. The person who eats heavily

and has severe gastric upsets is often unwilling to admit dietary indiscretion. Repeated questioning, and frequently hospital observation, may be necessary to obtain the required information. There is, however, an unfortunate tendency to place too much emphasis on X-ray findings, and not enough on clinical observation. The result is needless surgery in some, and unnecessary suffering in others who have definite histories of biliary colic but with radio-translucent stones and negative X-rays.

Every effort should be made to reach an accurate diagnosis. The Graham test should be repeated if doubtful. A gastro-intestinal series will very often show an unsuspected ulcer or even malignancy. In short, lack of improvement following operation is due more often to faulty diagnosis than to technical errors. Colcock,¹ Walters,² Holman³ and others have deplored the light-hearted attitude of too many in the profession concerning cholecystectomy. This is diffi-

* From the Thayer Hospital, Waterville, Maine.

cult to justify when one is confronted by the fact that post-operative complications are reported on the increase all over the country.

Acute cholecystitis presents a problem in management which requires mature, considered judgment. Cholecystectomy is the generally accepted procedure, but Lahey and Pyrték⁴ investigating 125 cases of benign stricture following cholecystectomy found that 25 of these occurred in acute cholecystitis. Insistence on cholecystectomy in difficult acute gall-bladders with marked edema and extensive pericholecystic adhesions may lead to disaster. The judicious employment of cholecystostomy would tend to reduce such accidents in the hands of the average surgeon.

Cholecystostomy affords proper drainage, and, therefore, removes the danger of perforation. It rides out the storm. After a suitable period, cholecystectomy should be performed, usually without difficulty. One is often impressed by the diminution in size of the gallbladder and by the remarkable lack of adhesions.

Benign stricture of the common duct often requires multiple and sometimes unsatisfactory operations. With proper technic these unfortunate accidents can be prevented. Good light with adequate exposure and a dry field are essential, because only four to five per cent of injuries were recognized at operation. Lahey suggested that anatomy was not properly demonstrated in most of these. Separate ligation of the cystic artery and cystic duct is strongly emphasized as an important preventive measure.

Attention is directed to one troublesome and insidious postoperative complication, namely paralytic ileus. It may be persistent and so refractive to treatment as to require all the patience and experience of the attending surgeon. In order to prevent this it has been suggested by some that routine intubation be employed. The value of intubation is beyond question. The routine employment of any measure, however,

should be discouraged. A nervous patient with apprehensive relatives may develop obstinate vomiting unless the gag reflex is suppressed by sedation enough to invite pulmonary complications. Esophagitis may also develop in an occasional case.

Finally, one is impressed by the smoothness of convalescence in the average case as compared to twenty-five years ago. Better pre and postoperative care with emphasis on the role of electrolytes, the use of Vitamin C and K and advances in anesthesia account for this difference. The hepatorenal syndrome has almost disappeared. Hepatitis and cholangitis have succumbed to antibiotics. The postcholecystectomy syndrome is a problem which is receiving a lot of attention. Operative cholangiography for a better diagnosis of common duct stones is a definite advance which should be made available to most hospitals as soon as practicable.

Summary: Cholecystectomy should be performed only after thorough clinical investigation. At the present time too many are being done without sufficient indication. Statistics from all over the country show an increase in postoperative complications, many of which are due to operative trauma. Separate ligation of the cystic artery and the cystic duct and cholecystostomy in acute cholecystitis with marked edema are suggested as important preventive measures.

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AMA Studies Physician Attitudes On Insurance

While there is no doubt that most physicians favor the many forms of voluntary health insurance now in existence over any compulsory tax system, no attempt has been made to analyze attitudes of physicians regarding certain aspects of the voluntary type of protection. The AMA's Council on Medical Service—through its Committee on Prepayment Medical and Hospital Service—currently is sponsoring a survey of these underlying doctor attitudes.

Since voluntary insurance programs are insuring an increasing number of persons each year, the attitudes of physicians—as they are the ones who render professional treatment to policyholders—are impor-

tant factors to consider in the future plans of insurance programs.

Among other things, the AMA survey is designed to bring to light certain physician attitudes regarding service benefits, the extent to which the principle of coinsurance should apply, the adequacy of benefits (fee schedules), the extent to which insurance may influence the cost of health care, and so forth.

Although the Council on Medical Service is sponsoring this study, the questionnaire itself was compiled after consultations with the Bureau of Medical Economic Research, representatives from Blue Shield and other organizations.

THE USE OF THE PHOTOELECTRIC COLORIMETER IN HEMATOLOGY*

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In the general clinical laboratory the red blood count and hemoglobin determination are the most frequently performed procedures. It would possibly be inferred that these tests should thereby be among the most accurate determinations performed, which is generally not the case. On the contrary, comparison of results obtained on a given sample by two or more technicians, whether in the same or different laboratories, frequently shows a variation of 10-20%. This may seem relatively unimportant in an individual test, but when used for following the course of a bleeding patient, or in a patient with a hemolytic disease, greater accuracy and reliability are certainly desirable and frequently essential.

Performance of a red blood count has been a standard procedure for many years, and only within the past few years have newer methods been proposed. In most instances the use of a standard pipette and counting chamber, using Hayem's solution primarily, or less frequently a different diluent, has been the procedure of choice. Using this procedure, a single experienced medical technologist generally shows an error below 5% in about 50% of counts and over 15% in approximately 20% of counts, as shown by multiple counts of a single sample of blood. Allowing for variation between two or more technicians, the error may run as high as 25% in a sizable number of patients. It is unjust to place all of the blame for this variation on the medical technologist. Very few laboratories feel that they can afford pipettes certified by the National Bureau of Standards. As a result, the variations between pipettes introduces a sizable error before the human error is added.

Several years ago a procedure was devised using the photoelectric colorimeter to measure the light passed by a suspension of red blood cells. It was found that the relation was a constant one, and that, within reasonable limits, this method could be used to provide red blood counts of adequate accuracy, rapidly, efficiently and inexpensively. After a period of time it was found that the procedure was accurate for counts within the normal range, but that below 3.5-4 million there was a considerable decrease in accuracy. Since the transmission of light depends on the size of the red blood cells as well as the number, this method loses accuracy in conditions involving marked variation in size of cell from the normal.

Our own studies indicate that using the safeguards mentioned below, the colorimetric method (using the B & L monochromatic colorimeter) is more accurate between 3 and 6 million than a random count made

by an experienced technician. The photoelectric method, properly calibrated, and with adequate control of material and equipment, is as accurate as the mean of at least six separate counts done on a given sample of blood.

The determination of hemoglobin has involved many procedures, from the simple, highly inaccurate Tallquist method to the highly specific analytical procedures for oxygen capacity and iron determination. It has been measured in various media, acid, alkaline, and neutral, with lack of agreement among experts as to which procedure offered greatest accuracy. There has been no general agreement as to what level should be considered normal. As a result of the multitude of methods and of means of reporting, data from different institutions, and, as a matter of fact, from any one institution, are frequently impossible to evaluate.

The problem of instrumentation has produced many difficulties for laboratory personnel. The use of Sahli-type hemoglobinometers was considered the ideal method several years ago, until it was found that a few months' exposure to light produced sufficient fading of the glass standards to yield an error far beyond the permissible range. The same disadvantage obtains with the other instruments employing a "permanent" glass standard. In addition, the comparison of color or density depends on the subjective impression of the technician, again introducing a marked variable.

One of the greatest advances in the field of clinical laboratory medicine has been the development of the photoelectric colorimeter and its companion units, the spectrophotometer and flame photometer. Of these, the photoelectric colorimeter is still the most important item of equipment in the general laboratory. By the use of this apparatus, the subjective error should be almost completely eliminated, and the results, therefore, should show a much greater degree of accuracy. Unfortunately, this is not always the case, and it should be of interest to review some of the reasons.

From the standpoint of engineering and manufacture, the photoelectric instruments currently available are generally excellent. Given constant voltage, they will produce a constant reading with a single cuvette and solution. It is the rest of the procedure that introduces the errors. In the first place, the tubes, or cuvettes, which are used in these machines are supposed to be selected and matched. Except for the few instruments which use only optically flat, ground, cuvettes, the selection of tubes at the factory leaves

* From the Thayer Hospital, Waterville, Maine.

much to be desired. All of the companies manufacturing this type of equipment place an indicating mark on the tube, which should result in the tube being inserted into the holder in the same position each time. We have found that the position of the tube makes relatively little difference when compared with the extremely wide variation between different tubes. In many shipments of colorimeter tubes (for most types of photoelectric colorimeters) the range of readings varies from the mean by 25% or more. Here, obviously, is a source of considerable error.

A second similar source of error lies in the inaccurate graduation of micropipettes. In our laboratory the Sahli-type pipette delivering 0.02 c.c. is used for red blood counts and hemoglobin determination. A shipment of these pipettes generally contains up to 20% which deviate from the mean by more than 5%. If the errors in these 2 items are added together, one might well find a gross error of 30-40% in a given determination.

How does one go about improving this situation? Realization of the sources of error, and sufficient energy to eradicate them are all that is required. Peculiarly, this is one situation where the procedures recommended are actually less expensive than the older methods, which involved frequent replacement of counting chambers, and purchase of more expensive pipettes. The first item is the photoelectric colorimeter. For the tests under discussion the transmission type, graduated 0-100 on a scale, is probably the simplest and most rapid type to use. This machine operates on ordinary 110 volt current, but the readings will vary with changes in voltage because of variation in intensity of light under these conditions. Accordingly, for any procedure in which a standard is not run with every test, and preferably even if it is, one must be certain that the line voltage remains sufficiently constant so as not to produce variation in the readings. This can be done in several ways. In the first place, it is wise to have the line voltage checked with a recording voltmeter for a period of time. Study of the chart will then indicate the general normal voltage and the amount of variation. If the variation is not more than about 5%, a simple constant voltage transformer will satisfactorily level the voltage and produce good results. If the variation is not more than 15%, the electronic power supply will stabilize it. For variation over 15%, storage batteries with a trickle charger probably represent the most satisfactory solution.

Once the voltage requirements are met, we are ready to check the equipment. The colorimeter itself must be in good condition. The most important factors are tight electrical connections. Loose connections produce high resistance, with resulting variable voltage drop within the machine.

The tubes, or cuvettes, sold for most colorimeters must be checked for constancy before putting them into use. Our procedure is to make up a colored solution, fill all new tubes, and read with a single filter. Each tube is numbered, and the results listed. All those which read more than 2% away from the mean are returned to the dealer for credit. A similar procedure is carried out with new pipettes. We use Sahli-type 0.02 c.c. pipettes for both red blood counts and hemoglobin determinations. These are filled with a single sample of blood, rinsed into either the Gower's solution (for red blood counts) or sodium carbonate (for hemoglobin) and read. Only those giving results within 3% of the mean are kept.

By the use of the above procedures, it is felt that the standard of accuracy for these determinations, and actually for all determinations using the photoelectric colorimeter, has been elevated considerably, and made much more constant than before.

As a final caution, I should like to take this opportunity to condemn the advertising and sale of "precalibrated" photoelectric colorimeters. It is not possible for any technician to exactly duplicate the technical procedure carried out by the "factory calibrator." It should be obvious that unless the calibrating procedure is so duplicated, with reference to times, temperatures, solutions, etc., the results will bear little resemblance to accuracy. The instructions supplied with calibrations generally make little or no mention of the finer technical details of a procedure. Calibration of a colorimeter must be done in the laboratory where it is to be used, by the technicians who will use it. Every effort should be made in all laboratories to standardize all phases of all procedures, so that the results obtained by any technician will be reliable.

SUMMARY

The use of the photoelectric colorimeter in determinations of red blood counts and hemoglobin is discussed. Some of the major factors in production of inaccurate results are mentioned, with measures for correction. The use of "precalibration" of colorimeters is discouraged.

NONTROPICAL SPRUE*

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It is with trepidation that one presents a case not completely smothered with laboratory data. We believe that the small hospital with laboratory and X-ray facilities provides a satisfactory diagnostic unit for the majority of "rare" cases.

CASE PRESENTATION

R. C., #4033, a 22-year-old single white male, was admitted to the Thayer Hospital on March 9, 1953, with chief complaint of anemia and loose stools. His mother stated that he had always been pale and never strong and robust like his brothers and parents. Every winter she has given him cod liver oil and beef, iron, and wine, but in spite of this he has never grown like the others. For a number of years he has had some sort of stomach trouble, but denied any really serious upsets with his intestinal tract except for occasional loose stools seeming to come on in attacks lasting a week or so then subsiding. He first went to a physician in November of 1952 complaining of acute diarrhea with nausea and vomiting. Stools are said to have been watery, to have been associated with cramps, and at times to have been very foul. He was found then to have an anemia which was treated with diet, liver, and iron with some improvement. A month before admission he was placed on hydrochloric acid along with liver and it seemed to alleviate his attacks of diarrhea, particularly when he stayed on a high protein diet. Although clinically he improved, his anemia apparently did not and he was admitted for study. Family history and system review were noncontributory.

Physical examination revealed a chronically ill appearing young male of slight build with pale and dirty colored skin. Temperature was 99°, pulse rate was 80, respirations were 20, and blood pressure was 112/64. Positive physical findings were pallor, clubbing of the fingers, abdominal distention, and slight splenomegaly, one finger.

Laboratory: Urine had specific gravity of 1.013, was negative for sugar, albumin, and acetone, and contained 1-4 white blood cells in the sediment. Hemoglobin was 9.6 grams; red blood count, 3,200,000; white blood count, 3,800 with 48% polys, 11% bands, 33% lymphocytes, 7% monocytes, no eosinophiles, and 1% basophiles; hematocrit, 28%; platelet count 234,000—normal 200,000-400,000. Basophilic stippling, anisocytosis, and slight polychromatophilia of the red cells were noted by smear. Platelets appeared normal. Fasting blood sugar was 68 mg.%.

Nonprotein nitrogen was 23 mg.%. Total protein was 5.1 gm.%; albumin, 2.9 gm.%; globulin, 2.2 gm.%. V.D.R.L. test was negative. Stool showed much neutral fat and meat fibers.

Blood indices: Mean corpuscular volume 87 cubic microns. Mean corpuscular hemoglobin 30 micrograms. Mean corpuscular hemoglobin concentration 30%. A normochromic normocytic anemia.

Diagnosis: Nontropical sprue.

DISCUSSION

The central point in sprue is the impairment of fat absorption resulting in steatorrhea. Quantitative fecal fat content is essential for proof of steatorrhea. Assumption of its presence was made by the finding of neutral fat in the stool. The diagnosis in this case was made by the combination of offensive diarrhea, steatorrhea, hypoproteinemia, anemia, and a "deficiency pattern" of the small bowel on X-ray examination.

Proof of the diagnosis lies in the follow-up X-rays which must demonstrate no pathology and in the patient's course. At the present time, eight months



1. R. C., 3 hours, p. c.: Untreated advanced case of nontropical sprue showing segmentation, flocculation, hypomotility, "moulage sign," pyloroduodenal mucosal changes.

* From the Thayer Hospital, Waterville, Maine.



2. R. C., 6 hours, p. c.



3. R. C., 3 hours, p. c.: Seven months after start of treatment.

after treatment was initiated, the patient is in clinical and hematological remission. X-ray re-examination at seven months shows improvement but the disordered small bowel pattern persists. Such laboratory data as glucose tolerance tests, serum calcium, prothrombin time, quantitative fecal fat and nitrogen, bone marrow aspiration, gastric analysis, and duodenal secretion were not done and, unless one is in a teaching center or has a clinical indication such as tetany or purpura, need not be done.

The cause of sprue is unknown although it is undoubtedly a deficiency state. Multiple deficiencies may be present but they are, with the possible exception of folic acid and B_{12} , the result rather than the cause of the disease. It is agreed that nontropical and tropical sprue are the same disease.

The great majority of sprue syndromes are found to be primary or idiopathic. The secondary sprues may be diagnosed by hints from the clinical picture such as those mentioned by Adlersberg et al. (short course before hospitalization, type anemia, absence of leukopenia, tongue lesions, etc.) or, most likely, by the patient's course after treatment and by X-ray.

TREATMENT

Spies states that 6% of nontropical sprue patients are refractory to all treatment. The remainder will respond to basic diet, multivitamin capsule plus B_{12} and/or folic acid. High protein, low fat, low starch diet plus 20 mg. of folic acid daily is reported by Badenock in seven cases of nontropical sprue with

clinical improvement in every case. Diéz Rivas reported ten cases of sprue with good therapeutic results on either folic acid 15 mgms. by mouth daily or B_{12} 15 micrograms intramuscularly, plus a 3718 calorie diet containing 134.5 grams of protein, 568.5 grams of carbohydrate, and 102 grams of fat. Six ounces of milk daily were allowed plus 20 grams of animal protein once or twice weekly. Oral B_{12} is not efficient.

These patients must maintain an adequate diet for the rest of their lives. Maintenance therapy B_{12} , folic acid, or both is often essential. Suarez states that the better results are in the early cases and in younger patients and in these permanent cure is possible. Combination of folic acid and B_{12} given orally may give best results and doses as low as 25 micrograms B_{12} and $2\frac{1}{2}$ to 5 milligrams of folic acid are favorably reported. Liver extract was the treatment of choice before B_{12} and folic acid and should be given a trial if the others fail. Cortisone is favorably reported upon. The present case received 15 mgms. of folic acid daily plus a multivitamin capsule and a sprue diet. His response is satisfactory.

ROENTGEN DIAGNOSIS OF NONTROPICAL SPRUE

The roentgenologist is frequently the first to suggest the diagnosis of sprue and his opinion may lead to much clinical study.

In a wide variety of disease conditions such as sprue, celiac disease, colitis, hypoproteinemia, mesen-

teric disease, starvation, vitamin B deficiencies, food allergies and in such conditions as interfere with digestion and absorption such as carcinoma, tuberculosis, sclerosing enteritis, and diseases of the liver and biliary apparatus, is found a disordered pattern of the small intestine. This is apparently nonspecific and differs only in degree in different conditions. Ross Golden emphasizes that a nutritional disturbance producing such a changed small bowel pattern does not rule out other organic disease and that the symptoms of the nutritional disturbance may be obscured by those of the underlying primary disease or that on the other hand the symptoms of the nutritional disorder may be the only manifestation of the underlying organic disease. Ross Golden has suggested the term "disordered motor function" on the theory that the abnormal small bowel appearances were of that nature. Other factors however have been described which may help to produce the X-ray complex. These are edema of the mucosa and organic changes in the wall of the gut.

Another school of thought ascribes these abnormal appearances partially or wholly to the effects of abnormal intestinal content. Frazer, French, and Thompson were able to demonstrate the induction of a segmentation pattern in the small intestine in normal human subjects by intubation and changing the character of fat content of the intestine.

It is evident that no etiologic term is appropriate to describe a collection of X-ray abnormalities given in part or whole by varying pathological conditions.

These disturbances which are varied and depend on the type and severity of the lesion may include:

1. Hypermotility: This may occur early. The opaque meal may reach the cecum in less than one-half hour.

2. Hypertonicity resulting in the reduction of the lumen of the gut to one-half or even one-quarter of its normal width.

3. Hypomotility in later stages in which the head of the meal may take six hours or longer to reach the cecum.

4. Hypotonicity in advanced stages of nontropical sprue. Dilated loops may be seen twice the caliber of normal or more.

5. Abnormal segmentation may be due to disturbances of normal reflex peristalsis. Spasm of the muscularis narrows or obliterates the lumen in places, the intervening portions being of normal or dilated caliber. If the spasm obliterates the lumen the barium is aggregated into separate masses—so-called "clumping." The obliteration of the valvulae conniventes causing a smooth appearance of the margins of the segments gives the appearance of smooth, dilated, barium filled, sausage like, segments, the so called "moulage sign" first described by Kantor. Irregular

to-and-fro peristalsis may be seen on fluoroscopy. After the main bulk of barium has passed downward, remnants remain giving a fleck like scattering. This appearance was duplicated in the experiments of Frazer and his colleagues previously referred to. They altered the intestinal contents by injecting fatty acids or lactic acid into jejunum with a duodenal tube. On neutralization of the acids, the pattern changed to the normal.

6. Excess gas in the intestine: Pendergrass suggests that this may be due to diminished power of the mucosa to absorb gas.

7. Disturbances of the mucosal pattern: There are areas of marked irregularity. Jejunal mucosal folds may be diminished or obliterated. If mucosa is edematous as in hypoproteinemia, the thickened folds may produce wide irregular indentations.

8. Delayed gastric evacuation may be found in advanced cases. In our case (R. C.) marked irregularity and dilatation of the bulbar segment and duodenal arch were found.

The above changes are most marked and persistent usually in middle third of small bowel. Successful treatment of the cause of the disturbance is followed by partial or complete return to normal depending on the degree of structural change. Re-examination of our advanced case seven months after successful therapy with considerable functional improvement shows that the changes in intestinal pattern are only in degree and that some evidence of disordered pattern remain.

It must be emphasized that the small intestinal disturbances under discussion are nonspecific and may be due to a wide variety of causes and possibly to purely neurogenic causes such as emotion and dysfunction of the autonomic nervous system. Every roentgenologist has seen sudden changes in the bowel pattern during the course of an examination in response to suggestion and to psychic disturbances.

The symptoms of a primary nutritional disorder such as sprue are obscure in the early stage and frequently there is a long history of digestive tract disturbances beginning long before the typical clinical picture develops.

The differential diagnosis of sprue on X-ray films for the above reasons is often difficult. Marshak and Wolf describe the diffuse granulomatous involvement of the small bowel known as ileo-jejunitis or jejunitis and discuss their differential diagnosis from nontropical sprue which may be difficult in the nonstenotic forms of these sclerosing enteritides. In sprue the characteristic findings are segmentation, flocculation of barium, hyper- or hypomotility, and dilation of intestinal loops. These changes are evidence of disturbed function and are not inflammatory. In sprue the small intestinal pattern may be altered by drugs that affect the autonomic nervous system such

as prostigmine or banthine or by nutritional changes or even by using a "colloidal" barium mixture. Such induced alterations have not been observed in sclerosing enteritis. In the early acute stages of granulomatous jejuno-ileitis the differential diagnosis from sprue cannot be made according to Sussman and Wachtel. In the subacute and chronic stages changes are often similar to the late stages of regional enteritis and are characteristic. Marshak and Wolf find that the chief diagnostic point is the occurrence of segmentation in sprue. When segmentation is observed the diagnosis of ileo-jejunitis should be suspected.

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A SIMPLE PROCEDURE FOR TREATMENT OF ALKALI BURNS OF THE EYE*

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Alkali burns of the cornea and conjunctiva can cause disastrous permanent disability much greater than burns due to most other chemicals. The purpose of this paper is to re-emphasize the importance of early recognition of alkali burns; to stress the necessity of immediate, effective and continuous treatment; to mention briefly some of the more recent writings and experiments dealing with alkali burns; and to offer a simple technique of treatment to minimize the severity of the end results.

William Hughes, Jr.,¹ covered alkali burns of the eye in detail in his article in the Archives of Ophthalmology, 1946. The chemical and physical factors influencing the severity of the burns were discussed by him and are enumerated below. These factors were also discussed in a similar manner by W. M. Grant² in 1950.

They are:

1. Character of the cation
2. Concentration of the alkali
3. Duration of the exposure
4. Degree of alkalinity
5. Speed of penetration

The specific effect on protein and mucoids, as well as other corneal constituents, is stressed by these men among the physio-chemical properties. They emphasize that alkalis cause a denaturization of the corneal mucoids. After a severe experimental alkali burn, the corneal mucoids can no longer be found by extracting with ammonia. (Hughes) The combination of the alkali with the corneal mucoids retains the toxic agent within the injured area and results in prolonged damaging effects. It is this characteristic of

all alkali burns that makes them so serious and necessitates more intensive and continued treatment.

The course of an alkali burn is well known. There is immediate pain, orbicularis spasm and decrease of visual acuity. The conjunctiva becomes injected and chemotic. The cornea becomes edematous and greyish; there is usually loss of epithelium which may be extensive. The agent, softening and denuding the cornea, quickly penetrates to the aqueous and is carried to the anterior portions of the eye. This then results in an irritative or toxic iritis. Protein molecules quickly appear in the aqueous; adhesions then form between the lens and the pupillary edge of the iris. Peripheral adhesions between the iris and the corneo-scleral angle can block the angle and ultimately cause glaucoma.

If the agent is not removed and neutralized permanently, extensive damage can result. Corneal opacities, adhesions between the conjunctiva of the globe and of the lids, perforation of the cornea and intra ocular damage of the type above mentioned can occur. Even loss of the globe, necessitating enucleation of course can be the eventual outcome of a most severe case.

The treatment of these cases is well known and nearly universally standard in its essentials. Nearly all authorities stress that first of all it is essential to have prompt, vigorous and effective irrigation of the eyes. It is better to do this at once, and not to waste time trying to neutralize the alkali, but to go ahead with copious lavage by tap water, saline or whatever bland irrigant that is immediately available.

Following early first aid treatment of immediate irrigation, the patient is usually brought at once to a hospital or a doctor for definitive care. Here a va-

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riety of methods and drugs have been suggested. Many have been used experimentally and clinically.

Whereas continued irrigation occasionally is suggested as by Hughes¹ and Grant,² it is frequently noted in the literature that emphasis has been placed on specific technique and drugs.

McLaughlin,⁴ in his report on a large series of eight hundred cases of chemical burns, uses a definite routine. Irrigation is the primary step. Following this, pontocaine is instilled and all foreign materials, such as pieces of lime, are removed. Also, all devitalized epithelium is stripped away from the cornea and the conjunctiva. It is felt that the alkali may remain in these areas of epithelium, continuing to exert a toxic effect. He then uses sulfadiazine ointment and covers the eye. A patient is hospitalized if he shows signs of local or general infection. In the case of potentially permanent corneal scarring, he advocates irrigation with saline four or five times daily. In our experience, this does not seem adequate. Rather it should be done the first day every fifteen or thirty minutes, hourly the second day, and less frequently thereafter. Only in this way can one be sure of eliminating the greater part of the toxic material.

When a very deep burn is encountered, McLaughlin suggests the use of amniotic membrane grafts on either the cornea or the conjunctiva. He states that in his eight hundred cases, less than two per cent had permanent corneal opacities.

An important and useful adjunct in treatment of alkali, as well as other chemical burns, is "hydrosulfosol" or sulfhydryl. This has been reported many times in the literature; as for instance by H. S. Kuhn,⁵ Lewis,⁶ and Cruthirds,⁷ and more lately by Harley.⁸

The drug appears to reduce materially the degree of resulting opacification of corneal scars. In his excellent article, Cruthirds⁷ discusses the mechanism of action. Hydrosulfosol influences the cellular SH metabolism by combining with some other compound in the body. This compound endows the hydrosulfosol with a therapeutic activity it did not originally possess, which in turn aids in the reduction of permanent scarring. It is said to act in a similar manner to BAL—when the latter is used to protect experimental animals against the effects of alloxan.

Cruthirds presented five cases; Lewis reported three; and Kuhn studied three hundred eyes treated with hydrosulfosol. They all seem to feel that its use lessens the degree of scarring and the need for later grafting.

The drug is used after initial irrigation and debridement has been carried out. It is used topically either in aqueous solutions or in castor oil,⁵ dilutions of one to twenty or one to forty. It may be instilled at two-hour intervals, or it may be used as a pack that may be changed at two- to four-hour intervals.

Cruthirds suggests the use of systemic sulfhydryl, five to ten drops in a capsule, taken three times a day to re-enforce the topical use.

The use of ammonium chloride and sodium bicarbonate is suggested in a rather extensive paper in the Spanish literature by Manuel Guelbenzu.⁸ This is reported in English in the *American Journal of Ophthalmology*. He bases his work on experimental studies of other investigators showing that a hyperacid state develops in and about the cells following a burn. He therefore employs an ointment of sodium bicarbonate which he applies freely at once to the burned areas. In the case of burns definitely due to an alkali, he prefers the employment of an ammonium chloride ointment for the first two or three days. He then uses the sodium bicarbonate. This use of the ammonium salts is frequently reported, some authors preferring neutral ammonium tartrate.⁹

While it is of considerable value to know and to employ specific drugs for an alkali burn, frequently the drugs are just simply not at hand. The aim of treatment in such cases should be elimination of the toxic substance; its neutralization with whatever substance we may have at our command; and prevention of secondary infection. If the burn has been severe enough, later surgical procedures of grafting, lysis of symblepharon and elimination of corneal opacities can be carried out on a more elective, rather than emergency basis.

The first part of the course of treatment begins at the site of the accident. The eye is copiously irrigated with whatever bland irrigant that is available—usually water. The patient is usually seen soon by a doctor. Here simple treatment can be carried on, which can effectively reduce the subsequent amount of ocular disability.

Every alkali burn should be considered a hospital case, if possible, even for only the rest of the accident day. The procedure depends immensely on the interested coöperation of the nursing staff. The eye is irrigated, after being seen, with copious amounts of fluid. This is usually normal saline, as this is immediately available. Pontocaine is then instilled in the eye and all particles are removed. All devitalized tissue is removed with a wet cotton swab so as not to endanger normal tissues. When one is sure that no alkali particles remain, the subsequent treatment is aimed at constant removal of the toxic irritant.

To this end, irrigation is carried out with normal saline every fifteen minutes for the first day, cut down to a half hour during the night. The next day the irrigations can be reduced to hourly intervals. Further reduction depends on the rapidity of the improvement of the individual burn; but after the fourth day, further irrigation is of little value.

Neutralization can be carried out as soon as the patient is seen by the doctor. If nothing more than

weak acetic acid solution from household vinegar, one teaspoonful to a quart is employed, this will be of value. It can be carried out during the first day as a part of the irrigating solution. Neutral ammonium salts are almost always unavailable. The use of sodium bicarbonate in alkali burns is not of proven value.

To prevent secondary infections with subsequent scarring, adhesions, etc., an antibiotic is used concurrently with the irrigation. Terramycin drops, aureomycin ophthalmic solution or even sulfadiazine may be employed at hourly intervals the first day, then every two hours thereafter until the eye is well healed. It must be remembered that the concentration of the antibiotic has to be maintained at a high constant level to be of value.

In very severe burns where scarring and symblepharon appear inevitable, the use of egg membrane has been suggested by Croll and Croll.¹⁰ They suture lightly, two overlapping pieces of the membrane over the cornea. They place strips in the cul-de-sacs. In this way, opposing surfaces of injured conjunctiva are kept apart and the cornea is protected from the alkali remaining in the conjunctiva and from the latter's roughened surfaces as well. The strips laid in the fornices are removed in three days; those over the cornea may be left longer if necessary.

If a method of treatment similar to the above is carried out immediately, and with vigor, many of the frequent complications will be minimized and, indeed, may not appear at all.

It is of interest to summarize a few cases and their results:

J. N., age sixty-three. A worker in a textile plant uses sodium hydroxide solution as a neutralizing agent in one of the processes in the mill. Due to some never explained cause, the solution erupted one day covering his face and eyes. He received immediate water irrigation, but he had to travel a distance of fifty miles to get to the hospital. Both corneae were grey, and he had marked chemosis, photophobia and pain. He was treated with irrigations of saline and neutralization with acetic acid solution. Pontocaine was used and all devitalized tissue removed. Topical antibiotics were employed, and the above regimen was followed. The patient's eyes healed well, but in an area of the deepest burn of the cornea, he developed a pterygium-like overgrowth of conjunctival tissue.

N. B., a forty-five-year-old plasterer, was mixing the material when he received a splash of it in the left eye. Irrigation was carried out on the job; he came immediately to the hospital. The cornea was completely grey, chemosis was present, and small pieces of lime were found in the fornices. He was subjected to the above regimen and his eye healed well.

Not all cases go as well. H. S. was a forty-two-year-

old "tester" in a paper mill. He received a massive exposure to "lime in acid" in the right eye two years before seeing us. He apparently was never hospitalized, but was treated as an office patient. When seen, he had extensive corneal scarring, edema and injection of the conjunctiva and photophobia. Local treatments were of no value. He was temporarily more comfortable with X-rays. A peritomy was done, but it was of little help. Cortisone seemed to have temporary benefit. Finally his pain became unmanageable, and his eye had to be enucleated.

SUMMARY

The potential danger of alkali burns of the eye is re-emphasized; the necessity for immediate continuous treatment is stressed.

The mechanism of action of alkali burns is mentioned briefly; it is the combination of the chemical with tissue muco-proteins which prolongs the burning action.

There have been many methods of treatment suggested in the literature and many of them are based, as ours is, on frequent irrigation. The use of various drugs has been suggested. The most frequently reported one is hydrosulfosol. This appears to have some beneficial actions in reducing the amount of scarring.

But many times specific drugs are not at hand when one is faced with an alkali burn. It is with this in mind that a simple method of treatment is suggested; it can be summarized as follows:

1. Copious irrigation is immediately instituted with whatever bland agent at hand—usually water.
2. Every alkali burn should be considered a hospital case, if possible, if even only for the rest of the accident day. Here, copious bland irrigations are immediately used.
3. Pontocaine is instilled and all particles of the chemical and devitalized tissue are removed.
4. Irrigation is then continued with the saline. It is used copiously every fifteen or thirty minutes the first day, every hour the second day; less thereafter as indicated.
5. Neutralization with weak acetic acid from household vinegar can be carried out at once and continued as part of the irrigation the first day. Specific drugs are valuable but usually are not available.
6. Secondary infection is prevented by using an antibiotic such as 2% sulfadiazine dropped in after each irrigation.
7. The use of egg membrane—an easily obtainable substance—has been suggested in very severe cases to prevent adhesions. The egg membrane is laid in the conjunctival fornices and lightly sutured over the cornea, thus separating the raw, opposing surfaces.

PATHWAYS OF INFECTION AND MANAGEMENT OF DEEP CERVICAL ABSCESS*

LORING W. PRATT, M. D., Waterville, Maine

There are many anatomical complications involved in a meticulous discussion of the deep cervical infections. It is, however, possible to discuss such a problem rather generally and to understand the mode of their spread without recourse to anatomical minutiae.

There are two major anatomical pathways along fascial sheaths which allow the spread of infection up and down the neck:—

1. The carotid sheath may conduct infection to the base of the skull and even produce meningeal involvement, while extension downward or caudally along the sheath may involve the anterior mediastinum.

2. The prevertebral fascia constitutes a plane along which infection may spread to the posterior mediastinum, and behind which they may pass into the iliopsoas region.

The sites in which such localized infections may originate in the main, are as follows:

1. Teeth—Apical abscesses in the mandible may spread into the peridental tissues eventually involving the space between the mylohyoid muscle and the base of the tongue. This may produce severe respiratory obstruction from elevation of the tongue and from swelling of the base of it, producing obstruction to the hypopharyngeal airway. This type of infection rarely may rupture through the parapharyngeal space into the carotid sheath and thence into the anterior mediastinum.

2. Tonsils—Tonsillar infection occasionally ruptures through the capsule of the tonsil and spreads into the peritonsillar region. This is separated from the parapharyngeal space by a rather thin barrier and the infection frequently spreads and involves this region. It need only extend slightly further and pass along the carotid sheath to involve the mediastinum.

Metastatic infection of the cervical lymph nodes from tonsillar infection may also involve the carotid sheath with extension along its course.

3. Adenoid—Although this lymphoid depot is commonly thought to be related to the tonsil, it is, anatomically, related to the prevertebral fascial space. When infection breaks through the posterior wall of the adenoid it may produce a retropharyngeal abscess with posterior mediastinitis from extension along the prevertebral fascia.

4. Esophageal Perforation — This accident, whether due to foreign body, instrumentation, or neoplasm, allows air and a mixed group of organisms to escape into the prevertebral fascial sheath and its extension in such a way as to produce either a cervical cellulitis, a posterior mediastinitis, or a putrid em-

pyema, depending on the level and region of such perforation.

5. Infection of the cervical vertebrae (cervical Pott's Disease)—Most infections arising in this area are tuberculous. Rarely a pyogenic osteomyelitis may produce such an infection. These infections are always behind the prevertebral fascia instead of in front as in the case of retropharyngeal infection.

6. Nasopharyngeal infections, because of the lymphoid deposits in the retropharyngeal area, may produce abscesses in the retropharyngeal space, with the potential for the extension of pus into the mediastinum.

The clinical picture of deep cervical abscess has certain general characteristics. The typical clinical picture is one with associated swelling, tenderness, fever, and leucocytosis. The presence of pitting edema in the neck should, by itself, make one suspicious of the presence of a localized area of pus. The specific characteristics of the various types of abscess are of considerable interest. The treatment can best be described in conjunction with the discussion of the individual clinical entity.

Ludwig's abscess, or angina, is due to infection in the floor of the mouth. The patient has swelling which is tense and extremely hard in the region of the submaxillary triangle. The floor of the mouth is elevated and the tongue is swollen, thick and may protrude between the teeth. The mouth does not close and there is usually some trismus. In advanced cases, there is the typical pattern of upper respiratory obstruction and oftentimes tracheotomy is essential to save life.

The treatment of this infection first must be directed toward maintaining an airway, by tracheotomy if necessary. Secondly, large doses of antibiotics should be administered, preferably using the wide spectrum group of antibiotics, because of the usually mixed type of infection present. Thirdly, surgical drainage should be accomplished, by means of superficial and deep dissection of the floor of the mouth through external incisions in each submaxillary region. Through and through drainage is essential, if surgical intervention is necessary. This type of lesion is often a rapidly spreading cellulitis, with the localization of relatively little pus. Thus the success of the procedure is not necessarily related to the release of a large accumulation of pus; a few drops of discharge are often all that are found at operation.

Most cases of Ludwig's angina now are aborted by the judicious use of antibiotic prophylaxis at the time of dental extraction, or at the first sign of trouble

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thereafter. However, a significant number of these cases still appear and come to surgical drainage. Even with combined antibiotic and surgical therapy, there may be an appreciable mortality in this disease, resulting from overwhelming toxicity.

Masseter sling abscess usually arises from infection about the lower teeth, or as the result of oral surgery. This is a well localized abscess, although at times it extends to other areas. Unilateral swelling of the region of the mandible, with redness, tenderness, and pain on chewing are characteristic. Therapy is adequate control of the dental involvement and antibiotic therapy. In some instances, surgical drainage, is essential. When indicated, it is necessary to make an incision parallel to the ramus of the mandible and incise the sling, being careful to expose the periosteum and the compartment of the sling on the medial surface of the mandible as well as the external surface. A drop or two of pus usually is all that is required to produce a satisfactory result.

Peritonsillar abscess, an important etiologic factor in deep neck infections, is seen most commonly following or in the course of an acute tonsillitis. It produces pain and discomfort on swallowing, some difficulty in talking, and, if involvement of the pterygomaxillary space has occurred, it may produce some trismus. The patient talks as if he had "hot mush" in his mouth and often catches his saliva in a handkerchief because of inability to swallow it. The treatment is by means of antibiotics, hot throat irrigation and analgesics. If the swelling does not decrease promptly with this therapy, incision and drainage should be carried out, taking great care that none of the large blood vessels in this area are injured. For this reason, sharp incision of the mucous membrane, followed by spreading of the incision by means of a forceps, is the treatment of choice. While the use of topical anesthesia in the exact line of incision is only moderately satisfactory, general anesthesia is to be avoided because of the potential pulmonary complications and the possibility of respiratory distress in the course of the procedure. Recovery usually takes place in three or four days. Tonsillectomy generally is indicated at some later period after the acute process has subsided. This infection is one of the most important factors in the production of parapharyngeal infections.

Parapharyngeal infection usually arises from tonsillar, peritonsillar, or dental infections and is characterized by edema and tenderness in the region of the angle of the jaw. Trismus, a common sign, is the result of infection and edema of the pterygoid muscles. The infection may extend anteriorly and become a Ludwig's infection, or posteriorly and involve the carotid sheath. These abscesses, fortunately, are lo-

cated in the vascular area at the angle of the jaw, and for that reason sometimes are completely relieved by antibiotic therapy. The surgical approach to this region is best made through a "T" shaped incision with the top parallel to the border of the mandible and the stem extending over the submaxillary gland.¹ From here exploration of the submaxillary space is a relatively simple matter. An alternative approach to this region may be made by reflecting the lower pole of the parotid and entering the pharyngomaxillary space externally. However, in most instances, this is unnecessary as incision and drainage of the inciting peritonsillar infection, or drainage about the infected tooth, is adequate to take care of the infectious process, when coupled with adequate antibiotic therapy. Extension from this region leads to involvement of the carotid sheath.

Carotid sheath infections manifest themselves by redness, brawny edema, tenderness, fever, and leucocytosis. Unilateral swelling of the neck often produces edematous changes in the cervical tissues across the midline of the neck. The presence of pitting edema, in the absence of fluctuation should certainly make the physician suspicious of a cervical abscess. The appearance of fluctuation often occurs only some time after the pitting edema is noted. Treatment of this infection should be begun at once, with large doses of antibiotics and with surgical drainage of the carotid sheath. Neglect of surgical drainage may permit the infection to pass down the carotid sheath into the mediastinum, while early drainage may well prevent this calamitous complication.

Retropharyngeal abscess (purulent) is a disease of children, involving the retropharyngeal space usually as the result of an upper respiratory infection, particularly a nasopharyngitis. In this infection, a large, palpable mass is present in the posterior wall of the pharynx and hypopharynx. There is respiratory distress, and sometimes edema of the arytenoids. Again, treatment is by means of antibiotics and surgical drainage. There is considerable danger in incision and drainage of one of these abscesses and tracheotomy should be prepared for in advance. The old school of practitioners, who encountered more of these infections than are seen today were accustomed to opening them by holding the child upside down and rupturing the abscess, thus permitting the pus to drain out of the mouth. The author has opened several of these by means of light inhalation anesthesia (when the airway was adequate to permit it), placing a Crowe-Davis mouth gag in place with the patient in Trendelenburg position, and making a small incision in the fluctuant mass. A suction cannula is held at the incision and the contents are completely evacuated while at the same time the incision is gradually enlarged. The danger of a large incision releas-

ing a gush of pus, too great for the suction to handle, and aspiration, with either atelectasis or pneumonia as a result, is readily apparent. No complications have occurred in the patients treated in this manner by the author and recovery has been prompt.

Retropharyngeal abscess (tuberculous) is the result of infection extending from a cervical Pott's disease into the region behind the prevertebral fascia. Should incision and drainage be essential, such a procedure should *never* be undertaken intra-orally. Rather, external incision should be made in the neck and drainage accomplished by this route, thus avoiding the possibility of pulmonary involvement from aspiration of tubercle bacilli. The treatment should be, then, medical treatment of the tuberculous infection, therapy of the Pott's disease and external incision of the abscess, only if absolutely necessary.

MANAGEMENT OF THE RETARDED CHILD*

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It has been estimated that at least 3% of the total population of the United States is victim of mental retardation. Nearly one million children in this country, including at least 100,000 mongoloids, are so mentally retarded that they cannot progress beyond the first few grades in the ordinary schools. Some of these children come from families who are able to support their children in private schools. Some of them need specialized institutional care. However, the great majority are from families who cannot afford such care. They are children with a slightly substandard intelligence who are not educable in the academic sense but who can be taught to care for themselves and become self-supporting in a non-skilled profession. Many parents do not seek help through public education, fearing their exposure to the ridicule of other children. As a result, these children grow up in a secluded, nonproductive society, measurably increasing the unhappiness of the family group.

It is not within the scope of this paper to consider the causes of mental retardation. In general, physicians are unduly pessimistic about the future of the mental defective. When confronted with this type of patient, the physician usually contents himself with making a diagnosis and, if necessary, suggesting medical treatment. Once this unpleasant task has been accomplished, there is a tendency to evade further responsibilities, not from lack of sympathy but perhaps because the attitude has been one of hopelessness with such a problem. However, if at all possible, we should endeavor to make the child self-

CONCLUSION

Deep cervical infections are serious and form potential hazards beyond the confines of their own immediate area. They must be treated promptly, and, in most instances, may be adequately controlled by means of bed-rest and antibiotics. In some instances surgical drainage is essential to recovery. Cervical tuberculosis of vertebral origin presents special problems in the treatment of retropharyngeal abscess secondary to this disease.

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supporting, instead of a lifelong burden to the family and to the taxpayers who support our State institutions. These institutions already are over-crowded or inadequate.

Diagnosis constitutes only a small portion of the services which a physician can offer the mentally retarded child, because these children do have the ability to learn, however slowly. Therefore, in order that a reasonable program of training and education may be outlined, we need to have some approximation of their developmental level and progress. Little can be expected from the idiots, imbeciles, and low-grade morons, and many of these who do not die early in life must be institutionalized. Children with an I.Q. below 40 do not have the intellectual capacity to take part in even a limited training program. The parents too often are subjected to false hopes and a prolonged period of uncertainty. But the large majority of mental defectives is made up of children who may be expected in adult life to attain a maturity level of 6-10 years (40-70 I.Q.).

Bakwin in his book "Behavior Disorders in Children" mentions a report by Fairbank, who studied the progress of 166 children, found to have an intelligence quotient between 61 and 72. When this group was studied initially in 1914, it was felt that problems would arise, such as "vagrancy, alcoholism, prostitution, delinquency and chronic dependence, reproducing without care and handing over to others their defective offspring." The follow-up of 122 of these individuals provided interesting statistics. Seventeen years later only four had illegitimate children; eight had a history of chronic alcoholism, five

* From the Thayer Hospital, Waterville, Maine.

had court records after they reached adulthood, and nine were being assisted by relief agencies before the depression. Ninety-five families out of 122 were financially independent, and 36 families owned or were buying their own homes. These men and women were employed principally as domestic workers and as unskilled laborers in factories, by railroads, and in shipyards. They were doing jobs which the normally intelligent find uninteresting and perhaps degrading, but which those of duller intelligence perform satisfactorily and contentedly. Ten were skilled laborers and 6 were clerks. Forty individuals were available for retesting, and in all instances the intelligence quotient had remained practically unchanged during the seventeen-year interval.

The intelligence level, as measured by psychological tests, is not the only factor to be considered. Emotional stability, physical condition, personality characteristics, and other factors may determine to considerable degree how the individual may adjust in home, school, or community; or whether he will be able to adjust at all in those settings. A program for these children should have as its aim: (1) training of the child within the limits of his mental capacities; (2) correction of physical defects; (3) prevention and correction of emotional problems.

Once the shock of the realization of the child's condition has faded a bit, one is asked the usual question "Will he be able to go to school?" Some satisfaction will be felt if the parents understand that possibly the child may start his formal education somewhat later than others of his age. As the time approaches, they realize that a public education is out of the question or would result in an unhappy situation. The parents then discover that there are no facilities in the community for the mentally retarded child.

This is indeed a dismal picture. Until there is an increased social consciousness of this problem which leads to special classes, increases psychological services, and acceptance of coöperative educational services, the individual physician in most communities must assume a great deal of responsibility with these mentally retarded children. He must advise and often supervise what is to be done.

In an effort to train a child within his capacities, one must study each child carefully and determine his readiness for such training. State services are available to estimate his developmental level if doubt exists. If he is a pre-school child, our training will be, of a necessity, much simpler. Although he learns slower, this type of child can be taught the social amenities. He must be taught personal hygiene so that untidiness will not be an additional defect. One must remember that this child cannot accept generalities but each phase of the training must be specific. Each habit is taught as a specific one. When done

within the family group, their natural ability to imitate can be a helpful asset. If the family has made a good adjustment to this child, it has been found that they develop faster in their home environment, than in specialized schools. Emphasis must be placed on patience. The parents must not blame the child if he cannot do what they wish him to do the first or second time, or even the ninth or tenth, that they show him. They must understand that the child simply may not have reached a stage of development which enables him to do what they wish, even though he desperately wants to please, and tries over and over again. The physician should impress upon the parents the importance of setting aside their desires and waiting, perhaps six months or a year, and then go back to the task again. By that time the child may be ready for his new achievement and may readily accomplish the task they have set for him. These children reflect the emotional attitudes of the parents to a much greater degree than normal children. Consequently, parents of such a child must accept his slow progress and curb their expectations or they will have a "problem child." Over indulgence must be discouraged because of his inadequacies.

Parents must be taught what to expect of their child at different developmental levels. These have been outlined by Gesell and can be modified simply for their individual use. Toys are important tools of growth and these children will use their toys longer than the normal child. Toys should be carefully chosen, not only to meet the needs of the present mental capacity but also to stimulate growth beyond it. Here the physician is of great help in suggesting those toys and activities which supplement and substitute for those activities of the kindergarten, which are denied to them.

Many of these children are docile and relatively easy to manage. The large majority, by reason of lack of brain development or damage, are restless, distractible, and hyperexcitable. They must be trained to fit into family and other social groups. In expecting a certain behavior performance, parents must remember that the child functions at his respective mental level. Punishment for failure to comply with a simple command should not be given out of exasperation but in an attempt to impress social behavior on a child of similar age. These children do not respond to discipline involving abstract reasoning. Their memories are short and they must learn in a repetitive manner by cause and effect. The necessity of a routine, whether it be in play, in teaching him to feed or dress himself, or in establishing toilet habits, cannot be impressed upon these parents too strongly. This same method of training is utilized in developing language and speech. Exercises which prepare the child for speech, such as lip blowing, licking, and lip closure can be carried out in a variety

of ways. Such exercises as practical suggestions for training the retarded child at home, are available in a small brochure, by Naomi H. Chamberlain and Dorothy H. Moss, entitled "The Three 'R's' for the Retarded," published by the National Association for Retarded Children. Edna Davison Osterhout has compiled a beginners book for teaching these children at home. This covers reading, writing, spelling, numbers, handwork, and games. This is published by the Duke University Press.

Everyone is familiar with the numerous physical defects exhibited by these children. Most of them present a strabismus of one form or another. Their awkward gait makes an unfortunate picture. Dental defects, deformities of the ears and of the palate are external evidence of underlying skull abnormalities. Many of these can be corrected so that the child will be more presentable. Once corrected, they save the parent and the child from future embarrassment. Some of these defects must be corrected for reasons other than vanity. For example, it has been found that many of these children have unusually high arched palates and a tongue bound down by a short frenulum. In order to make such sounds as L and N, one must put the tongue to the roof of the mouth. Speech therapy is made easier therefore, if the child

has the ability to reach the roof of his mouth with his tongue.

Because of their restlessness and poor control, many of these children get into situations from which a normal child could easily extricate himself. They do not as a group present any constant personality pattern. Their inability to adjust to routine without training often creates behavior problems. Such children often are abused by the more intelligent ones. Only by repetition and routine can one develop the socially desirable traits which will keep the child out of serious trouble, and avoid embarrassment with withdrawal from further attempts to train him. Careful management involves exploration of each new social situation, for the older defective is quite sensitive about being placed in a strange new environment of which he has no comprehension. Such a child, sent to school and asked to perform above his level, responds only with increased hypermotility and restlessness.

It is the responsibility and duty of the physician to direct the management of a retarded child along these lines; constantly reminding the parents of his intellectual shortcomings, so that they, with an intelligent comprehension of the situation, may help their child achieve the most of his abilities, and become better prepared to take his place in society.

MD's Never Stop Studying

In these busy times the average practicing physician still manages to devote the equivalent of 83.3 eight-hour days a year to keeping abreast of current developments in the field of medicine. This striking figure is one of many brought out in a preliminary report by the AMA's Council on Medical Education and Hospitals on its recent survey of postgraduate medical education. Survey findings are based on data compiled on personal visits to more than 220 institutions engaged in postgraduate medical education as well as 5,000 questionnaires received from a random sample of 17,000 practicing physicians throughout the country.

Not only are more opportunities for postgraduate medical education being offered today than ever before, but more doctors are taking advantage of these opportunities, the report indicates. Over 41,000 practicing physicians took some form of postgraduate medical course last year (this figure excludes all "graduate" courses formerly considered "postgraduate").

Ways in which the doctor keeps up-to-date on medical matters are divided into five categories: (1) Medical reading; (2) professional contacts with colleagues, consultants, etc.; (3) hospital staff meetings; (4) attendance and participation in medical

society and specialty group meetings at the local, state and national level, and (5) postgraduate courses conducted by some 26 different types of organizations such as medical schools, health departments, medical societies, hospitals, etc. Physicians responding to the questionnaire indicated that about one-third of the time spent in continuing their education is devoted to medical reading, another one-third to professional contacts and the remaining one-third divided among the other three forms.

Other highlights of the preliminary report: Some form — though varied — of organized postgraduate medical course is being offered in every state in the country. . . . Ninety per cent of these postgraduate courses are offered in the larger cities. . . . Chief reasons noted for not taking postgraduate courses is lack of someone to care for patients while the doctor is away and the multiplicity of medical society and hospital staff meetings. . . . More than 93 per cent of the responding physicians felt that the maximum amount of time they could be away from practice was under 15 days. . . . It cost the average physician surveyed in this study approximately \$350 per year to attend postgraduate courses alone, without including the other four forms mentioned above. . . .

It is expected that the final report on the survey will be ready about the middle of the year.

A CARDIO-RESPIRATORY UNIT*

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It is our purpose to describe a device which has proved very practical and useful in our hospital. The idea of portable resuscitation units has been increasing in popularity for the past several years. We have had ours in use for three years, during which time it has more than proved its value.

Various models may be constructed, but the basic idea remains one of maneuverability. Our unit is a metal, double tiered cart, with wheels; measuring approximately 22 inches x 32 inches. However, the size is relatively unimportant as long as it contains the items necessary for its intended purpose.

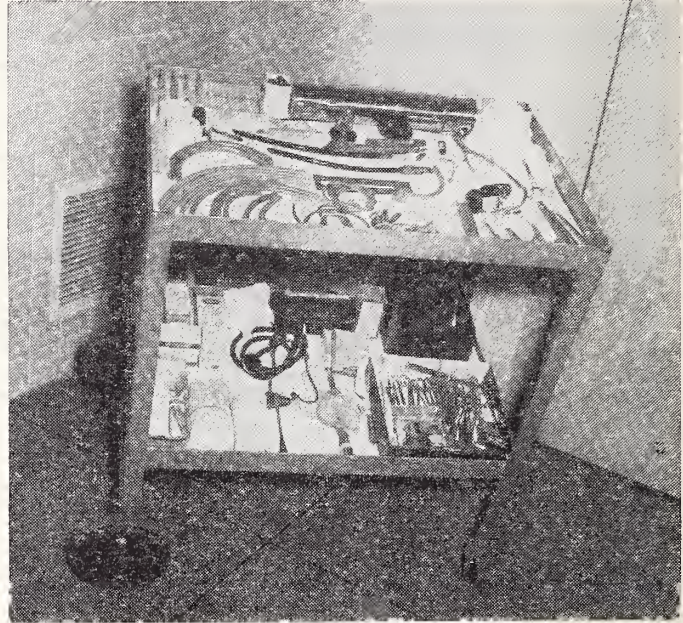
We have arranged on the cart instruments and accessories which might be valuable in times of emergency, as follows:—

(a) Top shelf:

1. Laryngoscope with various sizes and types of blades.
2. Airways—oral, nasal and endotracheal tubes, with the appropriate adaptors.
3. Mouth gag, bite blocks, catheter scale and stilettes.
4. Miscellaneous items such as suction catheters, Levin tube, tongue depressors, gauze squares, adhesive tape, roller bandage and tourniquet.

(b) Lower shelf:

1. Tracheotomy set — labelled, sterile and prepared for immediate use.
2. Cardiac resuscitation kit — containing duplicated items necessary in the event of cardiac standstill or fibrillation. This set is also ready for immediate use and is distinguished by labelling, as well as by a bright red wrapper.
3. Bellows (Kreiselman) hand resuscitator.
4. Wooden rack of commonly used stimulants.
5. Syringes, needles and intravenous equipment.
6. Pentothal set — for controlling untoward sensitivities.



Listed above are some of the items which may, very conveniently, be utilized whenever or wherever needed. We have found a portable apparatus of this nature to be invaluable. It may be used anywhere throughout the hospital, especially in the operating suite. Ours is used almost routinely in conducting endotracheal anesthesia; wherein the accessibility of the tubes, scope, etc. has been extremely helpful.

It is recommended that this unit be maintained at all times and exhausted material always be immediately replaced. It is also suggested that it be kept in a central, well-located area and all personnel advised of its station and use.

The equipment may be altered to suit the requirements of any hospital or of the demand placed upon it. The value of the unit lies in its availability for immediate use throughout the hospital. When and if a critical situation suddenly develops, precious time might be saved by the utilization of an equipped unit such as the one we have described. The best way to deal with an emergency is to be prepared to do so. This unit, always ready and available, represents that preparation.

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THE USE OF CORTISONE IN ALLERGIC DERMATITIS

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There are two unique aspects to the study of an allergic dermatitis. One is that the gross lesion is under direct visual observation; so that its progress can be accurately followed. The other is that in most instances one or more specific etiological factors can be identified; and a cure achieved by their avoidance. Several characteristics of allergic dermatitis, in distinction to other skin disease, should be recognized. If uncomplicated, the lesion should be self terminating once an adequate avoidance regime has been established. The usual course of an eruption should be to reach its greatest intensity rapidly, in a few days or even hours; and then to subside, at times as rapidly as in the case of urticaria; and at times slowly, but with perceptible day to day improvement, as with contact dermatitis. This development may not be invariable; but any variation should at least excite the suspicion that one of the complications discussed below is present.

The types of dermatitis to be considered in the allergic category are contact dermatitis, urticaria, drug reactions, and atopic eczema. All are frequently seen in general practice; and are therefore of considerable clinical importance. Cortisone may be expected to have a favorable effect on each of these conditions. Cortisone is almost never a life saving drug in allergic dermatitis; nor is the patient's health often in jeopardy. Therefore indications for the administrations of cortisone are rarely impelling. Its use, within limitations to be specified, is justified for two reasons: namely, that small doses are frequently effective, and short courses of treatment are often sufficient. Under the circumstances complications are not too great a hazard. It must be emphasized that none of the usual contraindications should be present prior to its use. Side effects and intercurrent infection must be watched for during its use. It goes without saying that, when equally effective, less potent drugs are always preferable.

Assuming that these precautions are observed, there are several particular considerations that apply to its use in allergic dermatitis:

1. The etiological factor should be known. Obviously cortisone is not being used intelligently if a plant dermatitis is suppressed, but the plant is not recognized and avoided.

2. If the etiological factor is unknown, a short course of cortisone may be tried. During this time the cause should be sought for relentlessly, and despite any favorable response to the cortisone. In this regard it is necessary to realize that a quantitative effect can be achieved with cortisone. A given dose

may completely suppress the lesion, while a smaller dose will permit mild manifestations. The latter condition should be allowed to prevail for two reasons. First, the dose is obviously safer; second, relapses resulting from exposure to the etiological factor, or any of the complications listed below, can be recognized and contended with. For example, a patient with atopic eczema due to an unrecognized sensitivity to eggs. If the eruption is completely suppressed with cortisone, while eggs remain in the diet, when the course of cortisone is terminated the eruption not only recurs, but the frequently seen rebound phenomenon may be observed. On the other hand, if the dose of cortisone is adjusted so as to deliberately allow the eczema to persist in a mild form, it may be possible to observe a relapse when eggs are fed on a test diet.

3. The condition should be self terminating. Chronic urticaria and a variety of eczematoïd lesions may persist indefinitely and frequently are unresponsive to all known conservative therapy. They are questionably on an allergic basis, and they probably do not warrant prolonged use of cortisone.

4. Complicating factors in allergic dermatitis should be recognized. Those commonly seen are the following:

- a. Superimposed infection. This should be suspected particularly if there are excoriations, or where the integrity of the skin is otherwise disrupted as evidenced by the presence of an exudate or scabbing.

- b. Inadequate avoidance. This may result from the wrong etiological diagnosis in the first place. Or, in the case of foods, the offending food may be unintentionally consumed in a disguised form. In the case of cosmetics, the offending ingredient may be present in a substituted preparation.

- c. Multiple spontaneous sensitivities. This is a concept that is difficult to grasp, mainly because the physician has been disciplined to explain a diseased state on the basis of one etiological factor. However, it occurs frequently, and should be suspected when the exciting factor is known, but the condition does not terminate as prognosticated. For example, a patient developed an eruption thought to be due to phenobarbital. This medication was stopped, and chloral hydrate substituted but the rash persisted. It eventually became apparent that the patient was sensitive to both phenobarbital and chloral hydrate. This complication is difficult to evaluate. It means not only that the patient reacting to penicillin G may be sensitive to

a closely related substance such as penicillin O; but that the patient with urticaria from penicillin may simultaneously be having urticaria from aspirin or oranges.

d. The presence of secondary irritants. It is obvious that inflamed skin will not tolerate many substances intended for contact with normal skin. Soaps, detergents, numerous other household chemicals, woolen garments, and any friction or trauma are frequent offending factors. Occlusive wet dressings may be macerating. Topical applications, both the base and the active medicament, may be chemically irritating.

e. Possibly a condition similar to status asthmaticus, which might be termed status dermatitis, supervenes. That is, the mechanism for recovery is depleted or exhausted, and the dermatitis perpetuates itself even in the absence of the original exciting allergen or any apparent complicating factor.

While treating cases of allergic dermatitis the physician will often be confronted with the necessity of re-evaluating his original diagnosis. Penicillin reactions frequently present such a problem; since they may be delayed in onset, and persist an unreasonable length of time. It is first necessary to decide if the reaction could be from penicillin; and, assuming this to be true, to again decide after a variable length of time if the reaction is still due to penicillin. There is one good, but not invariable clue, to help resolve this problem. Sensitivity reactions resulting from a single exposure, or even from a prolonged exposure that has been presumed terminated, should reach their acme rapidly, and then fluctuate very little. Marked fluctuations or exacerbations usually indicate the presence of the previously listed complications, or the presence of other allergic factors.

Typical situations in which cortisone has been satisfactorily utilized recently, are the following:

A twenty-two-year-old college senior had a history of mild pollinosis for many years, in May. During final examinations, and just prior to graduation, she developed severe hay fever, and a distressing eczema involving the face, hands, and elbow flexures. She was given an initial dose of 150 mg. of cortisone, and kept on a maintenance dose of 50 mg. daily through the first week of June, with almost complete suppression of symptoms. When treatment was terminated there was no relapse. If the etiology were not known, an unexplained remission of about eleven months would inevitably result.

A thirty-eight-year-old business man developed a severe case of poison ivy primarily involving his face. At the end of four days on cortisone the lesions were sufficiently suppressed to permit him to keep various appointments that he felt were very important. The

daily maintenance dose was 50 mg. Treatment was terminated in two weeks with no relapse.

The patient previously cited with a sensitivity to two sedatives was relieved with cortisone. When he was given trial doses of phenobarbital and chloral hydrate, the eruption was visibly aggravated. It was felt that this procedure of provocative testing could be carried out without the risk of inducing a severe exacerbation.

A thirty-year-old female had a history of infantile eczema, recurrent flexural eczema, hay fever, dermatographia, seborrhea of the face and scalp, and many episodes of severe contact dermatitis requiring hospitalization. She was seen during one such attack, and quickly relieved with cortisone. The dose was regulated so as to minimize, but not suppress the lesions. She is now on a rigid avoidance regime, involving environmental factors, both contact and inhalant, and foods. Thus far, on controlled exposure, she was observed to relapse after sleeping on a mohair sofa, and after eating eggs. She had previously noted spells of itching and flushing when cleaning house; she has always avoided eggs as such, but never attempted to avoid them from mixed foods. Patch tests and intradermal skin tests are not appreciably altered while a patient is taking cortisone.

SUMMARY

An over-simplified approach to allergic dermatitis has been presented. In allergic conditions in general, cortisone or ACTH are usually reserved as drugs of last resort in desperate situations. In allergic dermatitis, on the contrary, it is suggested that cortisone may be used more freely because small doses are often effective, and the course of treatment of short duration. General medical contraindications must be observed. Various allergic considerations are discussed. If the etiological factor is not identified and avoided, the dermatitis will inevitably recur. If certain complicating factors, such as infection, irritants, inadequate avoidance, and multiple sensitivities, are not recognized and contended with, all types of therapy including cortisone may well be unavailing. Typical cases in which cortisone has been used safely and effectively in allergic dermatitis are presented.

Cortisone will undoubtedly be prescribed, wisely and unwisely, for many cases of dermatitis not confined to this discussion. However, the point is stressed that in uncomplicated allergic dermatitis, small doses of cortisone for short periods of time, are often effective. In fact, when so used, if cortisone proves to be ineffective, a diagnosis of uncomplicated allergic dermatitis should be challenged and reappraised.

The Journal of the Maine Medical Association

THOMAS A. FOSTER, M. D., Portland, Editor

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The President's Health Program

News comes from Washington, that the present administration is opposed to a compulsory national health insurance program. Indeed, the President has declared that he is not in favor of "socialized medicine". This is good news for the practicing physicians of the country.

It does not mean, however, that the many problems involved in adequate, well distributed medical care are wrapped up and ready to be put in storage. It indicates that the medical profession has a great responsibility to develop and perfect nonprofit voluntary health insurance plans which will offer wider coverage with substantial cash guarantees.

The President of the A. M. A. and the Trustees have assembled to study the recommendations in the President's Health Program. And, witnesses from

this group have appeared before the House Interstate and Foreign Commerce Committee to offer suggestions for incorporation in the report of the Committee.

Spokesmen for the A. F. L. and C. I. O. have appeared before the committee, also, and have insisted on a compulsory national health plan as "the only adequate answer to the need of our people".

The profession everywhere, from Maine to California, is under fire. Faithful adherence to the highest standards of practice and a devotion to the great traditions of American medicine will keep our ranks strong and united. Tolerance and understanding of the needs of the people will beget cooperation and eventual resolution of many problems.

Medico-Legal Conference

For many years the solemn sergeant has proclaimed that, "Taking one thing with another the policeman's lot is not a happy one." The Maine Medico-Legal Society gathered in Portland, February 4 and 5, discussed proposals to improve that "unhappy lot" so far as the medical profession is concerned.

At the semi-annual meeting of the Society which was dedicated to Dr. George L. Pratt of Farmington, Father of the Maine Medico-Legal Society, a large and enthusiastic group held conferences on Medico-Legal techniques in the Investigation and Prosecution of cases of violent and suspicious deaths.

In the first place we would like through the pages of the JOURNAL to congratulate Dr. Pratt on his well

merited recognition as a faithful and patient advocate of better medico-legal understanding and more successful procedures in the field. We furthermore feel that due recognition should be given to the Hon. Benjamin Butler and his committee for their achievement. The meeting turned out to be a most impressive gathering loaded with able and distinguished speakers and conference leaders. The Hon. Alexander LaFleur, Attorney General of Maine, and his law enforcement colleagues made a valuable contribution to the general subject.

Round table discussions on "Medico-Legal Advancement Since the Turn of the Century," "Law Enforcement and the Crime Problem," "Use of

Habeas Corpus," "Concepts of Limited Responsibility," "Medico-Legal Investigation of Abortion," "The Use of Circumstantial Evidence," "The Problems the Medical Examiner Faces," were a partial list of subjects presented by men eminently well qualified.

The address by the Hon. Eugene Cook, Attorney General of Georgia, was delivered at the banquet meeting. Mr. Cook, who is the President of Attorneys General Association of the United States, traveled all the way from Georgia to attend the meeting.

Locations For New Doctors

The process of finding locations for doctors who express a desire to come to Maine and practice is one that deserves a lot more study and effort than it has received. The prospect of a medical school here seems rather dim and even a project whereby a medical school elsewhere in New England which might be bound to receive medical students from Maine on payment of the full cost of medical instruction is only a dream at present. But toward the end of each calendar year and for two or three months thereafter this office receives inquiries from young doctors asking about locations in Maine.

About a year ago when Dr. Drake was president he asked doctors in different geographical sections of Maine to advise us of towns where a G. P. was needed. That information was furnished and has been used repeatedly.

That information now needs revision and additional data. Beside the name of the town that needs a doctor there is information that we should have to really carry the deal through. First and foremost if there is a committee in the town that is working on the problem, we need to know the name and address of the chairman. Most doctors want to know some of the details on the location which are only within the knowledge of local people, viz.: is a house available as a home, and probably office; are there good schools; what about churches; where is the nearest hospital and can the new man get staff privileges? Is there a subsidy or help of any sort for a young doctor just starting? Perhaps this office doesn't need to know all the answers, but it does need to know to whom to refer these questions.

We have another type of question which is more difficult to answer. Sometimes a young man qualified in surgery wants a rural location. It can't be too rural because while all G. P.'s in rural areas must do obstetrics and some surgery this young man obviously needs a larger population where he can do more surgery and less general practice. We don't know the places where such a doctor would fit in and be welcome.

Then there are the specialists who would really fill

And, Mrs. Frances Glessner Lee, Founder of the Chair and Department of Legal Medicine at Harvard Medical School and Captain of the New Hampshire State Police, was an honored guest.

Representatives of the great professions of Law and Medicine joined together for this instructive experience and report that all the conferences and all the speakers furnished them solid material for guidance and more satisfactory information in the performance of their duties which are so essential in a well ordered county.

a need in some instances if we had the information and could keep it current.

Maine will get its normal replacement supply of new doctors from Maine boys who have gone to medical schools and from boys who have interned in Maine or taken a residency in Maine hospitals, but that extra number which are needed here can only be obtained if we can answer the inquiries of new doctors who are writing in now and will be available next July or August.

An inquiry to the Maine Development Commission for locations for two young doctors a few months ago when publicized brought responses from nearly fifty communities. Some of them were good locations, some couldn't have supported a doctor if they got one, some were requested by local people who didn't like the doctor already there. This office would like the unselfish cooperation of Maine doctors all over the State to the end that Maine may have its fair share of medical attention.

These men who inquire are already trained: there is no expense for their medical education, no taxation for their training. No matter how you feel about a Maine Medical School or one in New England which will also accept qualified Maine boys, it is only good, practical common sense to make a real effort to find a good location for the doctors who write in and say they want to come here to practice.

Here is a quote from a letter just received:

"Am presently serving my internship here at City Hospital which will be completed on June 30, 1954. I am interested in entering into General Practice and am writing to you for information concerning openings and location data in Maine.

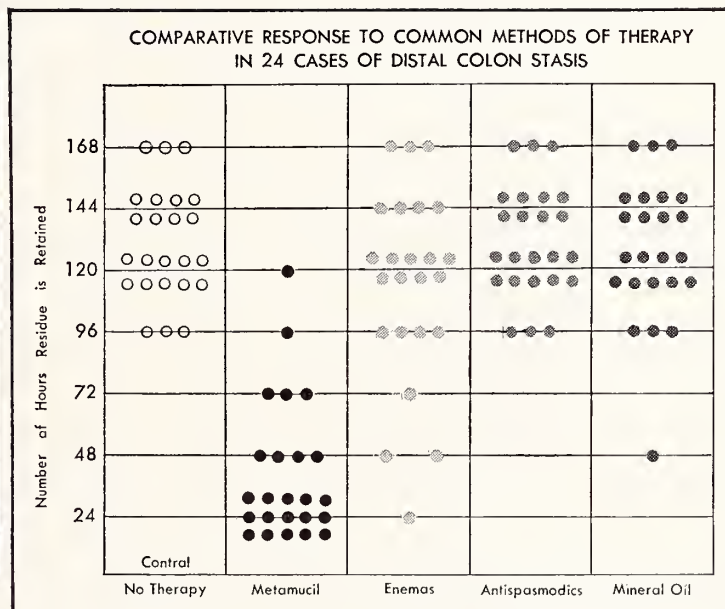
I would greatly appreciate any information you may have for me and seriously consider what there is to be offered.

I hold a license to practice Medicine in The State of Ohio, am originally from Saco, Maine, graduate of Bowdoin College and The George Washington University School of Medicine."

W. MAYO PAYSON, *Executive Secretary.*



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SEARLE *Research in the Service of Medicine*

*Barowsky, H.: A Roentgenographic Evaluation of the Common Measures Employed in the Treatment of Colonic Stasis. *Rev. Gastroenterol.* 19:154 (Feb.) 1952.

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COUNTY SOCIETY NOTES

Franklin

The following officers were elected for the ensuing year at the annual meeting of the Franklin County Medical Society on January 11, 1954:

President, John W. Friend, M. D., Farmington.

Vice President, Paul A. Fichtner, M. D., Rangeley.

Secretary-Treasurer, Paul E. Floyd, M. D., Farmington.

Delegate to the Maine Medical Association: Paul E. Floyd, M. D. Alternate: Philip B. Chase, M. D., Farmington.

Board of Censors: Maynard B. Colley, M. D., Wilton (one year); George L. Pratt, M. D., Farmington (two years); Harry Brinkman, M. D., Farmington (three years).

Robert J. Hughes, M. D., of Bangor, presented a very interesting talk on Electrolytes and Fluid Balance.

PAUL E. FLOYD, M. D.,
Secretary.

Kennebec

The annual meeting of the Kennebec County Medical Society, which was held at the Augusta State Hospital, Augusta, on December 10, 1953, began at 6.45 P. M. with a very nice steak dinner served to forty-three members and guests. Following dinner the meeting adjourned to the assembly room where President Sommerfeld opened the business session at 8.00 o'clock.

George E. Farrell, M. D., and Joseph A. Marshall, M. D., both of Waterville, were elected to membership.

It was voted that the following members are eligible for Senior Membership at the June meeting of the Maine Medical Association: Maurice A. Priest, M. D., of Augusta, and Ralph L. Reynolds, M. D., of Waterville.

The following officers were elected for 1954:

President, Charles E. Towne, M. D., Waterville.

Vice President, Wilson H. McWethy, M. D., Augusta.

Secretary-Treasurer, Arch H. Morrell, M. D., Augusta.

Council: Hugh J. Mathews, M. D., Gardiner (1954); Arthur H. McQuillan, M. D., Waterville (1955); Howard H. Milliken, M. D., Hallowell (1956).

Delegates to the Maine Medical Association: Kurt A. Sommerfeld, M. D., Gardiner; Loring W. Pratt, M. D., Waterville; Kenneth W. Sewall, M. D., Waterville; Philip Dachslager, M. D., Augusta; and Brinton T. Darlington, M. D., Augusta. Alternates: Edmund N. Ervin, M. D., Waterville; Clarence E. Dore, M. D., Waterville; Oakley Melendy, M. D., Augusta; Stephen W. Sanders, M. D., Winthrop; and Frank B. Bull, M. D., Gardiner.

The president then introduced our fellow member, Francis H. Sleeper, M. D., who presented an interesting and informative address on Crime and the Insanity Plea.

A. H. MORRELL, M. D.,
Secretary.

Washington

A regular meeting of the Washington County Medical Society in conjunction with the St. Croix Medical Society was held on Wednesday, January 13, 1954, at the New Charlotte County Hospital in St. Stephen, New Brunswick. There were fourteen members and guests present.

James C. Bates, M. D., of Eastport, Maine, president of the Washington County Society, presided at a short business meeting, during which it was voted to hold the next meeting in Eastport in April.

E. O. Thomas, M. D., of St. Stephen, president of the St. Croix Medical Society, introduced Arthur Kevin Carton, M. D., of St. Stephen, who spoke on the Experimental and Clinical Use of Intraperitoneal Infusions.

Dr. Thomas then introduced Herbert S. Everett, M. D., of St. Stephen, who spoke on a case of Acute Myelogenous Leukemia—a fatal and fortunately fairly rare disease.

The meeting then adjourned to the DeMonts Restaurant in Calais, Maine, where an excellent roast beef dinner was served.

The societies regretted to hear of the unfortunate accident to Dr. A. W. Torry, of Fredericton, N. B., which prevented him from addressing the meeting.

Dr. Rowland French, of Eastport, Maine, was present as a guest.

KARL V. LARSON, M. D.,
Secretary.

York

The annual meeting of the York County Medical Society was held at the K. P. Hall in Kittery, January 13, 1954. There were sixteen members and two guests present. A fine social hour and delicious dinner were enjoyed.

- The following officers were elected for the coming year:
- President, Leandre R. Charest, M. D., Biddeford.
 - Vice President, William B. O'Sullivan, M. D., Saco.
 - Secretary-Treasurer, Charles W. Kinghorn, M. D., Kittery.
 - Board of Censors: H. Danforth Ross, M. D., Sanford; Stephen A. Cobb, M. D., Sanford; and Joseph R. Laroche, M. D., Biddeford.
 - Committee on Resolutions: Willard H. Bunker, M. D., York Harbor; H. D. Ross, M. D.; and W. B. O'Sullivan, M. D.

- Publicity Representative: Paul S. Hill, Jr., M. D., Saco.
- Delegates to the Maine Medical Association: Kenneth J. Cuneo, M. D., Kennebunk; Frank W. Barden, M. D., Biddeford; and James H. Macdonald, M. D., Kennebunk. Alternates: Marcel P. Houle, M. D., Biddeford; Alexander W. Magosci, M. D., York; and Carl E. Richards, M. D., Sanford.
- Arthur D. Welch, Esq., of Portland, presented a very interesting and instructive talk on Alcoholism.
- C. W. KINGHORN, M. D.,
Secretary.

Louis N. Albert, M. D.
1869 - 1954

Dr. Louis N. Albert passed away at his home in Van Buren on January 14, 1954, after a long and painful illness suffered with an extraordinary patience. He would have been 85 years old next July. He was one of the oldest doctors in Aroostook County and the oldest along the St. John River.

He was born in St. Jean de Dieu, Province of Quebec, on July 10, 1869, son of Pierre Amable Albert and Lucie Rioux, both of whom died while he was still in his infancy. He was raised by an uncle, Pierre Cote, in L'Isle Verte, P. Q., where he attended the public schools. He obtained his B.A. at the Seminary of Rimouski and his M.D. in 1896 from the School of Medicine of Laval University in Montreal. He opened his office in Ste. Anne, New Brunswick, where he practiced until 1904. He then moved to Van Buren and practiced there until 1950, when he retired from the most strenuous part of his practice.

At the age of fifteen he was laid up for six months with rheumatic fever and recovered with a greatly impaired heart. On graduating from medical school his professor of internal medicine gave his heart a very (for those days) thorough examination and pronounced the following sentence: "Do not marry as you will not live past the age of 30." That he lived to be 84 was due to the regular way of life that he followed and the intelligent care that he took of his heart.

In 1896 he married Miss Augustine Hervieux of Montreal, who predeceased him in 1949. Six boys were born of the marriage, the oldest being Dr. Armand Albert of Van Buren.

New Members

Cumberland

- Phillip S. Fogg, Jr., M. D., 73 Deering Street, Portland, Maine.
- Herman C. Petterson, M. D., Chebeague Island, Maine.

Hancock

- William C. Luther, M. D., West Sullivan, Maine.

Kennebec

- George E. Farrell, M. D., Sisters' Hospital, Waterville, Maine.
- Joseph A. Marshall, M. D., Waterville, Maine.
- Jay Plimpton, M. D., Haymarket Square, Augusta, Maine.

Penobscot

- Richard A. Gaillard, M. D., 268 State Street, Bangor, Maine.

Piscataquis

- Isaac Nelson, M. D., Greenville, Maine.

Washington

- Hugh T. Bigg, M. D., 48 Washington Street, Eastport, Maine.
- Rowland B. French, M. D., 9 Washington St., Eastport, Maine.

Deceased

Aroostook County

- Louis N. Albert, M. D., Van Buren, January 14, 1954.

Franklin County

- Albion E. Floyd, M. D., New Sharon, December 1, 1953.

Kennebec County

- Forrest C. Tyson, M. D., Augusta, December 25, 1953.
- John G. Towne, M. D., Waterville, January 22, 1954.

Piscataquis County

- Nathaniel H. Crosby, M. D., Milo, December 29, 1953.

NECROLOGY

Nathaniel Hanscom Crosby, M. D.
1864 - 1953

Dr. Nathaniel Hanscom Crosby died December 29, 1953, at his home in Milo, Maine.

Dr. Crosby was the oldest practicing physician in Piscataquis County for several years.

He was born in East Benton, Maine, January 17, 1864. The family moved to Brownville when he was quite young and there he attended the local schools, later going to Coburn Classical Institute. He received his B.A. and M.A. Degrees from Colby College. He graduated with honors from the University of Vermont College of Medicine and in 1891 began the practice of medicine in Monson, Maine. Later he practiced in Brownville, coming to Milo in 1902 where he practiced medicine continually until the time of his death.

On December 24, 1899, he was married to Marion Alberta Hescok of Monson.

In December, 1951, Dr. Crosby received the 60-Year Bar of the Maine Medical Association at their Annual Meeting.

In 1948 Dr. Crosby was honored by the townspeople of Milo and the surrounding towns with a reception which representatives from the County and State Associations attended.

Dr. Crosby has served as Health Officer, County Medical Examiner, and President of the Piscataquis County Medical Society. He also has been Superintendent of Schools, President of the Milo Rotary Club, charter member, trustee, and later honorary trustee of the Park Street Methodist Church of Milo. He was a member of Onawa Lodge, I. O. O. F., of

Monson, Independent Order of Foresters, Monson Woodman, Order of the Eastern Star, and Orion Rebekah Lodge. An award of a 50-Year Masonic Medal was presented him by the Pleasant River Lodge, A. F. and A. M., of Brownville in 1940.

Survivors are a daughter, Miss Claire A. Crosby; a son, Luthan A. Crosby; a sister, Mrs. Minnie Chase of Springfield, Massachusetts; and two grandchildren.

Dr. Crosby was a friendly man, beloved by his associates as well as by his patients.

H. C. BUNDY, M. D.

NOTICES

The Maine Heart Association, Inc. 1954 Campaign

Dr. Charles W. Steele of Lewiston, President of the Maine Heart Association, reviewed the accomplishments of this organization during the past 4 years as a prelude to the Heart Sunday Campaign on February 28. He stated that the 3-phase program of education, community service and research had made the Maine Heart Association the number one organization in the State.

In reviewing the accomplishments of the treatment of cardio-vascular diseases in the State of Maine, Dr. Steele stated that there were now 7 Diagnostic Cardiac Clinics located at Portland, Lewiston, Waterville, Bangor, Caribou, Rumford and Bath. These are free to indigent patients.

The Catheterization Clinic at Portland was inaugurated by the Maine Heart Association in coöperation with the Maine Health and Welfare Association. It is partially supported by the Maine Heart Association. Dr. Steele stated that heart surgery has advanced beyond all realms of expectancy during the past 2 years.

Through an educational program conducted by the Maine Heart Association and the continued use of antibiotics, subacute bacterial endocarditis was no longer the menace that it was 4 years ago.

The professional education is carried on by servicing the physicians in the State with all the latest literature pertaining to cardiovascular diseases, free copies of "Modern Concepts of Cardiovascular Disease," furnishing identification cards, low sodium diet cook books for patients, "Nomenclature and Criteria for Diagnosis of Diseases of the Heart and Blood Vessels" to hospitals, professional films, professional exhibits on abnormal hearts and many other similar services.

The extent that the local organization can conduct these services will depend upon the response of the public to this Campaign.

American College of Surgeons Sectional Meeting In Montreal, Quebec

A Sectional Meeting of the American College of Surgeons will be held in Montreal, March 31, April 1 and 2, 1954.

Fellows of the College, members of the Junior Candidate Group, interns and residents are admitted without registration fees. Other doctors are charged a five-dollar fee, all of which goes toward paying a portion of the expenses incurred by visiting speakers.

H. P. SAUNDERS, M. D., F. A. C. S.,
Associate Director,
American College of Surgeons,
40 East Erie Street,
Chicago 11, Illinois.

Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.

Augusta General Hospital, Augusta, Maine, 1st Monday, 9.00 A. M., Leon D. Herring, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Ross W. Green, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

Department of Health and Welfare Division of Maternal and Child Health (Including Services for Crippled Children) Clinic Schedule — January Through June, 1954

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: Jan. 11, Feb. 8, Mar. 8, Apr. 12, May 10, June 14.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: Jan. 15, Feb. 19, Mar. 19, Apr. 16, May 21, June 18.

Rumford — Community Hospital, 1.30-3.00 p. m.: Mar. 17, June 16.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Feb. 25, June 24.

Rockland — Knox County Hospital, 1.30-3.00 p. m.: Feb. 18, May 20.

Machias — Normal School, 1.30-3.00 p. m.: Feb. 10, Apr. 14.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.: 1.00-3.00 p. m.: Jan. 12, Mar. 10, May 11.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: Mar. 9.

Fort Kent — Peoples Benevolent Hospital, 10.00 a. m.-1.00 p. m.: Jan. 13, May 12.

**Bangor* — Eastern Maine General Hospital, 1.30-3.00 p. m.: Jan. 28, Mar. 25, May 27.

Augusta — Augusta General Hospital, 1.00-3.00 p. m.: Apr. 22.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: Jan. 29, Feb. 26, Mar. 26, Apr. 23, May 28, June 25.

Continued on page 50

A Simple Procedure for Treatment of Alkali Burns of the Eye—Continued from page 34

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Bangor, Maine

Notices—Continued from page 48

CLEFT PALATE EVALUATION CLINICS

Portland — City Dispensary, India Street, 10.00 a. m.: Feb. 9, May 11.

PEDIATRIC CLINICS

**Bangor* — Eastern Maine General Hospital, 1.30 p. m.: Jan. 29, Feb. 26, Mar. 26, Apr. 23, May 28, June 25.

**Waterville* — Thayer Hospital, 1.30 p. m.: Jan. 5, Feb. 2, Mar. 2, Apr. 6, May 4, June 1.

**Presque Isle* — Northern Maine Sanatorium, 1.30 p. m.: Jan. 27, Mar. 24, May 26.

*Several of the Pediatric Clinics, and also Bangor CC Clinics, will be two-session clinics.

By Appointment Only

Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lexington — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Mansfield Clinic, Thayer Hospital. 3rd Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Caribou, Houlton, Lincoln, Machias, Rockland and Rumford. The Portland Clinic is open daily with a staff of 1 psychiatric social worker and 1 psychologist. The psychiatrist is in attendance on Tuesdays. The other clinics are staffed by a psychiatrist and a psychologist.

Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.

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TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

Streptomycin and Dihydrostreptomycin

Editorial, The New England Journal of Medicine, June 18, 1953. (Reprinted with slight revision by the author.)

In 1946 it was reported that streptomycin salts may be reduced to form corresponding dihydrostreptomycin salts; which were more stable in alkaline solution and had other desirable chemical properties. Subsequent reports on the comparative activity of streptomycin and dihydrostreptomycin, both *in vitro* and *in vivo*, showed that on the whole the drugs were equally active, although against a number of bacterial species, including some strains of tubercle bacilli and of salmonella, dihydrostreptomycin was appreciably less active.

In the November, 1948, issue of the *American Review of Tuberculosis* a series of six separate reports on laboratory and clinical aspects of dihydrostreptomycin appeared. Among them were two clinical reports, one on 14 patients treated at the Mayo Clinic and the other concerning 12 patients observed at the New York Hospital. The investigators in both clinics concluded that dihydrostreptomycin seemed to be as effective as streptomycin and had the advantage of being tolerated longer before toxic manifestations became apparent. The other important feature noted was the fact that dihydrostreptomycin could be used to continue therapy in some patients who had shown sensitivity reactions to streptomycin. Although these workers were satisfied that dihydrostreptomycin was an improvement over streptomycin in this regard, both groups emphasized the fact that its administration in sufficiently large doses could produce the same damage to the nervous system as streptomycin. A major drawback to large-scale use of streptomycin is the emergence of drug-resistant strains of tubercle bacilli and this was not overcome by the derivative; moreover, cross-resistance between the two agents was complete.

In spite of the small number of cases and the short period of the study, these observations had such a profound effect on many tuberculosis clinics and general hospitals that they rapidly turned from streptomycin to the use of dihydrostreptomycin. Within a short time nearly 90 per cent of all streptomycin that was produced and distributed was in the form of salts of dihydrostreptomycin.

It was not long, however, before workers began to realize that dihydrostreptomycin was not as innocuous as the early reports had led them to expect; indeed, that its potential toxicity was fully as grave as that of streptomycin. Although the toxic effects of dihydrostreptomycin on the vestibular apparatus were less than those of streptomycin, severe damage to the auditory nerve with permanent loss of hearing and even complete deafness were far more frequent, particularly when intensive and prolonged therapy was employed. These complications led several observers to recommend that dihydrostreptomycin be used only with patients who had become sensitized to streptomycin.

A more controlled study of the comparative toxicity and efficacy of the two forms of streptomycin was made by the workers in the hospitals collaborating with the Veterans Administration's study on the chemotherapy of tuberculosis. Data in groups of patients treated in exactly the same manner but given either streptomycin or dihydrostreptomycin, the choice of agent being entirely by a random selection, were presented at the Eleventh Conference of Chemotherapy of Tuberculosis in January, 1952. The study indicated that dihydrostreptomycin and streptomycin were equally effective and equally toxic, but whereas streptomycin was somewhat more toxic to the vestibular apparatus, dihydrostreptomycin caused more auditory damage and perhaps slightly fewer hypersensitivity reactions.

At the 12th Conference, in February, 1953, Lyght and Hawkins reported on another controlled study of the efficacy

and toxicity of these two agents. They found both to be about equally effective. Streptomycin apparently produced a higher percentage of sputum conversions, caused more allergic reaction, and frequently was significantly toxic for the vestibular system. Dihydrostreptomycin was relatively well tolerated with respect to allergic reactions, seldom was toxic for the vestibular system but was more likely to cause auditory loss which was sometimes progressive, especially after prolonged therapy.

Two other studies dealing with the combined use of streptomycin and dihydrostreptomycin were reported at this conference. A laboratory study, by Poutsika, Thomas, Linegar and Hobson, dealt with ataxia in cats—a delicate test for vestibular function. These tests showed that the time required for ataxia to develop in the cat from either streptomycin or dihydrostreptomycin was inversely related to the dose and that with the same dose it took appreciably longer to demonstrate ataxia with dihydrostreptomycin. When a similar total amount was used as a 1:1 mixture of the two agents, the appearance of ataxia was somewhat delayed over the time required for it to appear when streptomycin alone was used. This finding seemed important enough to warrant clinical trial of the mixture.

Such a clinical trial was reported by Heck and Hinshaw in 110 patients, each of whom was given daily doses of 1 gm. for 120 days; 34 received streptomycin, 34 dihydrostreptomycin, and 42 the 1:1 mixture of the two agents. Vestibular and auditory damage was studied during a six months' follow-up period. Vestibular disturbances were noted in six (18 per cent) of patients treated with streptomycin and in two (6 per cent) of those receiving dihydrostreptomycin; auditory disturbances were noted in none of the former, and in five (15 per cent) of the latter. All of the 42 patients treated with the 1:1 mixture were free of both vestibular and auditory disturbances.

Although this clinical demonstration appears to be quite striking, it would seem wise to accept the conclusions with caution. The number of patients was not large, and the results, judging from the laboratory experiment, appear to have been inordinately favorable. Further observations in large numbers of cases are necessary to ascertain whether equally favorable results can be obtained regularly, and under different treatment regimens.

In spite of the recent introduction of isoniazid and the demonstration of its effectiveness, streptomycin, either as such or as dihydrostreptomycin is still the mainstay of long-term antituberculosis therapy. Perhaps the most critical situation in which the availability of two forms of streptomycin has proved useful is in patients who have become sensitized to one of these agents. In such patients it has been possible to give the alternate compound without serious reactions and thus permit prolonged therapy. The hazard of sensitizing patients to both agents must be seriously considered and weighed.

Daily doses of streptomycin were used in the reported studies, perhaps in order to obtain comparable effects. Such doses are no longer considered necessary or desirable except possibly for short periods when chemotherapy is being instituted in acutely ill patients or in preparation for surgery. The most desirable and acceptable regimen for long-term therapy, employs streptomycin twice a week with para amino-salicylic acid daily. With this regimen the incidence of both vestibular and auditory disturbances from either form of streptomycin is low. This removes another cause for seeking to confuse chemotherapy by the use of the combined agents, each of which has certain distinct properties that it may be desirable to invoke separately in critical situations.

(The printing of Tuberculosis Abstracts is made possible by the cooperation of your local tuberculosis and health association.)

* From Vol. XXVII, February, 1954, No. 2.

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When Grandpa tucked you between his knees, you knew you were going to listen again to his wonderful watch—to hear its magic tick . . . tick . . . tick . . .

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The Journal of the Maine Medical Association

Volume Forty-Five

Portland, Maine, March, 1954

No. 3

RESPONSIBILITIES AND PROBLEMS FACING THE MEDICAL PROFESSION*

EDWARD F. STANTON, M. D., New York, N. Y.**

In speaking to you for a few minutes this afternoon on the responsibilities and problems facing the medical profession, I am simply bringing to you a few thoughts which I believe are pertinent at this time.

Today, the responsible physician has to consider other aspects of medicine, in addition to the curative side. Medical economics, social problems in medicine, public relations involving the profession, together with the entire range of governmental participation in the medical field, present many challenging questions and cannot be ignored by the physician, in favor of the purely scientific aspects of his calling.

My thoughts on these subjects have been focused through my activities on the Medical Economics Committee of the New York County Medical Society, and through a general interest in this phase of our activities. My remarks must, per force, be brief, and I think that we might confine our attention to a consideration of four main subjects: Compulsory Health Insurance, Medical Education, The County Medical Society, and, finally, Public Relations.

COMPULSORY HEALTH INSURANCE

In a talk presented to the Medical Society of the State of New York on the occasion of their 146th Annual Banquet on May 15, 1952, Dr. Louis Bauer,

* Presented at M. M. A. Centennial Session, Portland, Maine, June, 1953.

** Assistant Attending Gynecologist and Obstetrician, New York Hospital. Instructor, Gynecology and Obstetrics, Cornell University Medical College.

Past President of the American Medical Association said:

"Those of you who think that compulsory health insurance is a dead issue in the United States are indulging in wishful thinking. The immediate danger is in abeyance, but only temporarily so. The trend to socialism in this country is definite, and it cannot be stopped by the medical profession alone, but only by the aroused action of the people as a whole. There is too little interest in civic affairs today by the average citizen. The medical profession has been woefully lacking in its responsibilities of franchise, although other groups have been equally remiss. Freedom is a precious thing, but it can be lost by indifference, just as surely as by legislation or revolution. And, once lost, it is not apt to be regained."

During the past several years, the opposition of the medical profession to socialized medicine made it evident to Congress that compulsory health insurance would not only destroy the high quality of medical care, but would endanger basic American freedoms.

Recently, another threat presented itself. An editorial in the *Journal of the American Medical Association* of August 23, 1952, stated:

"Although the battle against the proponents of political medicine has been won, at least temporarily, in the state legislatures and in Congress, we are in some danger of losing the war through the international approach. Through the wholesale approval of treaties and executive agreements, our

international representatives have placed, not only American medicine, but our national sovereignty and our Constitution in jeopardy. Socialism by treaty is now a greater threat than socialism by domestic legislation."

What does this mean, and how has it come about?

In an article by L. J. Calhoun of Washington, entitled "Medical Care and the International Social Security Treaty," he stated:

"In the domestic drive for socialized medicine, defeat of the Wagner-Murray-Dingell bill proved to be only an opening skirmish. The final outcome may be importantly affected by the actions taken in Geneva at the International Labor Organization Conference in June, 1952."

The International Labor Organization was formed in 1919, as an adjunct of the League of Nations, and has continued in the international field. The United States is a member of the body. This convention last June exercised its authority of formulating international treaties in its adoption of the so-called "Social Security Minimum Standards Convention of 1952." The principles of this convention which relate to medical care call for comprehensive medical service to be provided by the government.

This convention or treaty has not been ratified by the United States Senate, and a two-thirds vote is necessary for ratification. At the present time, it does not appear that the question will be brought up for consideration. However, when the time seems favorable, it will undoubtedly receive strong support for its acceptance.

It is, therefore, of extreme importance that every one understands the fact that such a treaty, once ratified, and in force in the United States, automatically becomes a part of municipal law, a fact not generally true in other countries. In most countries, treaties take effect as municipal or domestic law, only when implemented by legislation. In contrast, the Constitution of the United States makes a treaty the supreme law of the land without regard to implementation.

Members of the profession can familiarize themselves with this subject through an article in the August 23, 1952, issue of the *Journal of the American Medical Association* on the "International Labor Organization—Its History, Purpose and Plans" as well as with the article by Mr. Calhoun in the same issue on the "International Social Security Treaty of the International Labor Organization."

In December, 1952, there was made public the report of the President's Commission on the Health Needs of the Nation entitled "Building America's Health." This is also known as the Report of the Truman Commission, and the Magnusen Report. Considerable attention has been given to this report, and opposition has been raised to many of its recommendations.

On reviewing the Report, the impression is gained that the medical needs of the country are too strongly emphasized in relation to the over-all needs of the population. Good health depends as much upon adequate food, clothing, shelter and sanitary conditions, as it does on medical care. One is further inclined to the belief that the general trend of the Report is toward governmental control of Medicine. The impression is that this is inevitable, if the vast program outlined is to be put into effect.

As an example, the recommendation concerning comprehensive personal health services accepts the principle of prepaid health services as the best method of financing the costs of medical care. Under this, however, is proposed a coöperative Federal-State program, to assist in the financing of personal health services. Each state would draw up plans to be developed with local or regional authorities, these to conform to Federal Standards and "submitted" to a Federal agency for approval.

And, what about these prepaid health services? Five proposals for governmental assistance in financing prepayment plans are advanced as possibilities. They are:

1. Direct Federal subsidy.
2. Federal reinsurance of private prepayment plans.
3. A Federal health insurance corporation.
4. National health insurance.
5. Federal grants-in-aid to the states.

With all of these, we wind up with the government controlling the purse strings.

The report of the President's Commission requires much study and analysis. The National Health Council met in New York from March 18th to 20th of this year for the purpose of discussing it. Mr. Frank G. Dickenson of the Bureau of Medical Economic Research subjected it to a very critical review. The medical profession should acquaint themselves with its recommendations, and also with the analysis by Mr. Dickenson which appeared under the title of "Building Health by Commission" in the May 21, 1953, issue of the *J. A. M. A.*

The implications and the possibilities for far reaching changes in the carrying out of the recommendations of this report of the Truman Commission are staggering. The problem is tremendously complicated and Organized Medicine must find men with adequate time and a broad understanding of the issues involved to cope with these vital questions.

MEDICAL EDUCATION

There are a large number of problems which might be considered under the general heading of Medical Education, but we can touch only upon a few.

The requirements for medical manpower in the future have received much study and discussion by a number of groups. Both the needs of the civilian

population and that of the armed forces must be taken into consideration. By present criteria, we shall be graduating 7,000 physicians by 1960, but with continued mobilization, civilians will have fewer physicians at that time than in 1949. The demand continues greater than the supply.

In a paper on the "Problems of Medical Education" by Joseph Hinsey, Dean of Cornell University Medical College, he points out that political pressures and public opinion will make expansion of medical schools necessary, and this has already been evident in a number. If expansions in our medical schools exceed the facilities, standards will inevitably deteriorate with a reversion to the techniques of mass education that were discarded years ago.

Dr. Hinsey believes that we must train more physicians, but that we must do it soundly. One-third of our States do not have a four-year medical school. In many of the present schools, geographic restrictions offer a serious obstacle, and in 35 of our 79 schools, less than 15 per cent of the first-year class comes from without the state. Pointing up the shortage of graduates available for internships, and the difficulties small hospitals experience, we find that in New York State alone, 600 graduates of foreign schools that are below our standards for approval are serving on interne and resident staffs or many of the hospitals.

The financial plight of the medical colleges is recognized on all fronts. The report of the National Fund for Medical Education of which Herbert Hoover was Honorary Chairman, stated:

"America's medical schools are in a precarious financial state. Virtually all of the nation's 79 medical schools need more money to meet operating expenses and maintain teaching standards at a high level. The report of the President's Commission for Building the Health Needs of the Nation expressed alarm at the progressively severe financial situation of our medical education system."

Basic operating expenses of the medical schools totaled 76 million in 1951-1952, with an additional 34 million from private and governmental agencies for medical research. Grants for the direct cost of medical research result in indirect costs to the medical schools ranging from 12 to 45 per cent and leading to the disturbing paradox of increased support for research draining an ever-increasing amount from the limited operating funds of the schools.

To meet the need, private support has been enlisted through the formation and efforts of the American Medical Educational Foundation and the National Fund for Medical Education. However, in the report referred to above, the President's Commission stated:

"Although such private efforts as the National Fund for Medical Education and the American

Medical Educational Foundation are to be heartily recommended, there is serious doubt as to whether they will be able to raise the big sums needed." The Commission then went on to recommend Federal Aid to health education in its final report.

There is considerable disagreement with this recommendation, as it is believed that it would bring the Federal government into too close contact with the policies and administration of the medical schools. Dean Hinsey, who was a member of the Commission, expressed dissent in a footnote found in Volume 1, page 21, of the report.

An Editorial in the *New York Herald-Tribune* of May 3, 1953, entitled, "Crisis in Medical Education" referred to some of the considerations mentioned above. They said two remedies are obvious: A Federal subsidy, which President Eisenhower has rightly said would be a perilous alternative, or financial help from private sources. The editorial directed the attention of the public to the National Fund for Medical Education.

The financial plight of the medical schools is one which must concern all of us, and one where we can lend support to our own individual schools, both financially and by word and action. We should also encourage support by the public of the private foundations mentioned above, the American Medical Educational Foundation and the National Fund for Medical Education.

Industry's stake in this matter was stated by William P. Given, Jr., President of the American Brake Shoe Company, in a talk to business leaders when he said:

"To the extent that we can afford, we must support medical education and medical research just as we do technical education and product research."

We, of the medical profession, have a bigger stake as we are striving to keep alive the system which has built American Medicine into its place of pre-eminence.

THE COUNTY MEDICAL SOCIETY

"If we wish to continue the idea that the most important aim of medicine is service to the public, then we must inculcate our newly trained physicians in the ethics and traditions of medicine."

Some medical societies are taking steps along these lines. A few are giving prospective members instruction in medical society organization and in the code of ethics. Some are appointing older members as advisors to new members. In some societies, talks are given by the executive secretaries to the students in the medical schools.

It has been suggested that membership, in the medical societies be made more difficult by having the candidate undergo a course of instruction in medical

ethics and in the organization and aims of the society, and given an examination prior to admission.

County medical societies must have the active interest and participation of their members. Years ago, our societies were largely scientific bodies. There were few social and economic problems. Today, the complexity of medicine has raised many questions. Hospital relationships, staff privileges, tenure of service, discrimination, care of the indigent, public health facilities, relationships with voluntary health insurance agencies, and the increasing participation of the government in medicine are some of the problems. Commercialism in medicine, unethical practices, excessive fees and many others are conditions which make for poor public understanding between the profession and the laity, and must be recognized and understood by the membership of the societies.

We cannot practice medicine as it was done a generation ago, free from involvement in these present day social and economic problems. In Dr. Bauer's words:

"If we fail to participate and lead in the solution of these problems, the solution will be taken out of our hands, and will not be a happy one. It is up to those of us who are active in the affairs of medicine to educate our colleagues and stimulate interest in the non-scientific aspects of medicine. If these matters are not handled properly, the scientific aspects will suffer, also."

Organized Medicine has contributed greatly to medical education through the American Medical Educational Foundation, but it has also tended to make more difficult the recruiting of qualified people to the medical faculties in some instances.

One county medical society president made a plea for contributions to a fund to aid young physicians, one of the purposes of this fund being to keep them from joining, full-time, on medical college faculties.

Several deans of medical colleges have spoken of their inability to attract certain men, because of the restrictions placed upon academic full-time by organized medicine. Able men are forced to leave academic life because of the narrow interpretations of what constitutes a consultation practice. These points require clarification.

"Many who take for granted the tremendous victories won by medical science against the deadliest of killers of only a generation ago, often overlook one crucial fact. All of these great advances would have been impossible without our modern system of education for physicians and other health personnel."

These words of Dean Hinsey of Cornell emphasize the fact that the misunderstandings between organized medicine and medical educators must be ironed out.

PUBLIC RELATIONS

A few years ago, the medical profession gave little consideration to the question of public relations, but so many new problems and changes have occurred that medical societies the country over have become conscious of the need for public relations programs. Only a beginning has been made, however.

The public relations of the medical profession is equal to the sum total of the public relations of the individual physicians. The unethical or thoughtless act of one physician is bound to leave scars on the entire profession. A public relations program does not become necessary simply because we are doing things wrong, but many times because what we are doing right is either unknown or misunderstood.

An example is the \$25.00 dues assessment of the American Medical Association, first asked of the members in 1950. In this particular situation, a large segment of the medical profession itself had to be educated on the purposes of the national organization in addition to educating the public-at-large.

Public impressions and criticisms of American medicine fall into five main categories, according to Leo E. Brown, Director of Public Relations of the American Medical Association. These are:

1. The Doctor's lack of personal interest in their patients;
2. The cost of medical care;
3. Inability to get a doctor in cases of emergency;
4. Waiting time in doctors' offices;
5. Refusal of physicians to participate in worthy community projects.

Abuses of any type on the part of a few doctors are quick to be taken up by the press and leave an indelible mark. A year ago, an Associated Press story in the *Chicago Tribune* had this headline:

"Charges Medics Steal Million in Health Plan."

The cause of this story was an editorial in the Bulletin of the Los Angeles County Medical Society, which stated that

"Member physicians are robbing the California Physicians' Service of nearly one million dollars a year."

Patients were being billed for services not rendered. This story was released without any report of disciplinary action on the part of the Medical Society.

For too many years, our chief concern through our professional organizations has been with educational standards, our medical schools, our hospital staffs, research, post graduate teaching, our professional journals, clinical sessions, and so on, down the line. All this is excellent, and most of what we have done is well regarded by those who know of our doings. Nevertheless, we are a party to many situations which fail to advance our esteem in the eyes of the public.

The matter of the so-called medical testimonials is

a case in point. The hucksters have moved in on us, lock, stock and barrel, and much which is advertised nowadays in newspapers, billboards, streetcars, radio and television lends itself to endorsement by some "noted specialist."

Other undesirable features are more serious. Abortions are still performed, fees are split, patients are overcharged, unnecessary surgery is not uncommon, failure to obtain a physician in times of emergency is regrettable. However, many counties now have doctors' emergency services.

In the February 20, 1953, issue of the *U. S. News and World Report*, there is an interview with Dr. Paul Hawley, Director of the American College of Surgeons, entitled "Too Much Unnecessary Surgery." Here, Dr. Hawley clarifies a number of situations for the public, but the reader comes away with the impression that there is still plenty of room for improvement on the part of the medical profession.

Unethical conduct on the part of a few doctors must be wiped out. In the March 22, 1952, issue of the *J. A. M. A.*, the then President, Dr. John Cline, had this to say:

"A Physician should expose, without fear, incompetent or corrupt, dishonest or unethical conduct on the part of any member of the profession. Unethical conduct by a small, irresponsible segment of the profession not only harms the patient involved, but endangers the freedom of medicine."

These same sentiments were echoed in the inaugural address of President McCormick at the A. M. A. convention in New York on June 2nd. The good public relations practiced by 98 per cent of the profession can be wiped out by the 2 per cent who persist in violating the Code of Medical Ethics.

We frequently hear the criticism from Chambers of Commerce, service clubs, and similar organizations:

"Why don't you physicians join with the organizations working for the betterment of the community?"

In a talk entitled, "Are Physicians People?" Dr. John F. Conlin of Boston observes that the modern physician is a harried breed. Our horizons are shrinking and our efforts must increase to keep pace with the flood of journals, meetings, breathless communications of detail men, to say nothing of the many staff conferences which are for the most part obligatory.

We are slaves to what has been called the "tong system." A couple of proctologists form the Patchogue Proctological Club. Then it is the Long Island Club, the Greater New York Club, the New York State, Northeastern, Eastern, American, North American, Western Hemisphere, and finally the World or International Proctological Club. The Club forms a Society; the Society delivers a College; and a Board, and so on. Finally, the conscientious proctologist hasn't time for anything but a succession of meetings.

Be this as it may, the fact is certain that unless physicians in a community have representative membership in civic, service, religious, veterans' and other organizations, there is both a loss of the opportunity of learning first-hand of justifiable criticism or misunderstanding, and there is a failure to fulfill our obligations as educated members, both of the community and of a dedicated profession.

COMING MEETINGS

MAINE MEDICAL ASSOCIATION

Interim Meeting — House of Delegates

Hotel Elmwood, Waterville, Maine — April 3, 1954

101st Annual Session

The Samoset, Rockland, Maine — June 13, 14, 15, 1954

A Progress Report of plans for this meeting will be published
in the April issue of the Journal

Don't Miss It

PROGRESS IN PEDIATRICS*

EDWIN T. WYMAN, M. D., Boston, Massachusetts**

The progress of pediatrics as a specialty has been accompanied by a change in pediatric education. Like practice, teaching in relation to infants and children was a part of instruction in courses of general medicine.

Gradually, certain teachers began to take a special interest in younger groups. Abraham Jacobi was a pioneer in this movement. In 1857, he began teaching at the bedside and continued to devote himself to problems of infants and children until his death in 1919. In 1861, Job Lewis was appointed Clinical Professor of Diseases of Children at Bellevue Hospital in New York. In 1888, Thomas Morgan Roche was appointed Assistant Professor at Harvard Medical School, and in 1893, full Professor with a Chair on the Faculty. In 1902, L. Emmet Holt was appointed Professor of Diseases of Children in New York Polyclinic at Columbia.

When I was graduated from medical school in 1911, pediatrics was a new specialty. In 1900, there were few men devoting themselves exclusively to the care of infants and children and probably not over fifty medical practitioners in the whole country who took a particular interest in this age group. Today, there are 3,468 members of the Academy of Pediatrics.

After graduation from medical school, I had always intended to follow in the footsteps of my uncle, grandfather and great-grandfather, and practice general medicine in Piscataquis County, Maine. To improve my fitness, I took a mixed hospital service, and the surgical and orthopedic services at the Children's Hospital, Boston. Then, feeling that I needed more training in the medical field of children, I obtained the medical internship at the Children's Hospital, in Boston.

At this time, Dr. Thomas Morgan Roche was Professor of Pediatrics at Harvard, and Dr. John Lovett Morse, with whom I was later associated, persuaded me to stay in Boston, where I have carried on since that time.

Much progress has been made since then. My most vivid memory of the orthopedic service at Children's Hospital was treating tuberculosis of the spine, with plaster casts, and breaking of the leg bones with an osteoclast for the treatment of bow legs and knocked knees and re-setting them in plaster casts.

The deformities often recurred as the anti-rachitic

properties of cod liver oil and other Vitamin D products was not known.

On the Surgical Service, Dr. James S. Stone, the Chief Surgeon, was making great strides in infant and children's surgery. His work was followed by Dr. William E. Ladd, and our present Chief Surgeons, Robert E. Gross and Franc Ingram have continued the definite progress in this field.

As the specialty of Pediatrics grew in stature, it became apparent that surgical procedures differed radically from those in adults. Also, many congenital malformations presented a challenge for corrections which was ignored by most general surgeons. Certain surgeons, however, in various parts of the country, began to take special interest in infants and children and to appreciate their peculiar problems.

In 1939, there was established at the Harvard Medical School the William E. Ladd Professorship of Child Surgery, the first such Chair in the world.

On the Medical Service at the Children's Hospital, I remember one of the "pup's" duties was to give, each evening, all new admissions diphtheria antitoxin, to prevent the occurrence of the then too frequent cases of diphtheria. The greatest medical hazards at this time were problems of diet and infectious diarrhea.

Pediatrics differs from all other specialties, in that it does not confine its interest to a particular system of the body or to a single disease.

The pediatrician is concerned with the whole person, as is the internist—his physical, mental, emotional and environmental problems—and limits his activities only by excluding the care of patients beyond the age of maturity. There has been a striking increase in interest in the growth and development of the fetus to the mature adult. This has come in the laboratory, in the clinic and in the field, and much of it from outside medicine.

Whether the growth of pediatrics as a specialty has been the stimulating spark for the study of growth and development, or whether the interest in growth and development has stimulated the growth of pediatric specialty is beside the point, the two have gone forward simultaneously, and the importance of the subject and the recognition of the peculiar problems presented by changing bodily structure and function have established pediatrics on a firm basis. The pediatrician is no longer considered a "baby feeder" but has taken his place as a respected teacher, investigator and practitioner in the medical fraternity.

Studies in nutrition have been pursued in many

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clinics and much knowledge has come, also, from the laboratories of pure science. It has been shown how important the complex details of diet are influencing growth and development.

The pediatrician has been able to utilize much of this new knowledge in the practical feeding of infants and children. He knows something about the individual food elements and their function in nutrition of the mineral constituents in the diet and particularly the role of vitamins, whose existence was not known many years ago.

He no longer sees marasmic infants, and scurvy and rickets have almost disappeared as diseases of infancy.

From recent studies, it appears that the present-day mature child is taller and heavier than his grandparents were at his age.

Rotch was the first to call attention to the epiphyses, as studied by X-ray, as indicators of the state of bodily maturity. The meticulous measurements of basal metabolic rates by Talbot furnished the first factual data on infants in this phase of bodily function. And in the realm of mental growth and development the outstanding observations by Gesell must be recorded. Much credit goes to Aldrich for emphasizing the importance of emotional factors. The general increase in interest in psychiatry is of special significance in pediatrics, for it is in the younger group that the hope of prevention lies.

Pediatricians from the first were concerned with the infant and especially with the problems of feeding. The newborn infant, both full-term and premature, has received increasing attention as the time has passed. The fact that most infants are born in hospitals and that in most of these the care of the infant is turned over to the pediatrician immediately after birth, has made possible opportunities for study and real advances in knowledge have resulted.

The close coöperation of the obstetrician has been of importance in many matters, as to the type of anesthesia given to the mothers, time of labor and techniques of delivery. It has been shown that many maternal conditions do influence the health of the infant.

The early reports of Gregg, from Australia, of the effect on the fetus of German Measles in the mother during the first trimester of pregnancy have been fully verified.

Blood Groups were discovered early in the century, but it was not until 1941 that Levine demonstrated the importance of agglutins in the highly fatal icterus gravis of the newborn.

Erythroblastosis Fetalis is now a well-recognized disease which is amenable to treatment. The feeding of the infant, both full term and premature, has undergone marked changes. Everything known about vitamins and most of what is known about

food elements and minerals, so far as they affect growth and development, has been acquired during the past half century. The pediatrician has had to modify his ideas and methods of feeding to conform to this new knowledge.

Breast feeding still remains the best method of nourishing the newborn infant. Its popularity waxes and wanes. Its popularity, now, I think, is increasing. Its waning was due, primarily, to improved methods of artificial feedings, and the demonstration that the former high death rate among infants not fed at the breast was due to factors that were largely amenable to control.

Fifty years ago, infants whose mothers did not nurse them were given either milk from other women, or a poorly devised concoction of which cow's milk was usually the basis. The milk was dirty, usually not being sterilized, and was put into dirty bottles and fed through dirty nipples.

Proprietary foods, usually deficient in most elements, except carbohydrates, became popular. Then came the movement for clean milk, and studies of its composition, followed by the period of modified milk feeding, an effort to simulate breast milk, and to find the best food for the infant.

In view of present-day knowledge, the percentage formulae then in use seemed to meet the requirements of a proper diet, but they were difficult for the doctor to figure out and prescribe. However, they did mark a real advance over former methods of feeding and indicated a search for a food that would meet the needs of the growing infant. The troubles of that period were due, in part, to the failure to differentiate, in the infant who was doing poorly, the role played in infection as against food inadequacies. Owing to the better understanding of nutrition, infants are now given artificial feeding with supplementary vitamins, which are safe and which supply, so far as is known, the requirements for growth and development. New facts, as they come to light, will further modify the practice, but at least the basis of infant feeding today is scientific knowledge, and not ignorant, guesswork.

The psychologic factors concerned in infant feeding have received increasing recognition in recent years. It is realized that emotional reactions are operative from birth and should be given consideration. "Rooming-in" where the newborn infant is kept in the same hospital room with the mother, "Demand Feeding" in which the infant is fed when he asks for it, and similar practices are in line with these ideas.

Prematurity still remains the most important cause of death in the first few days after birth. Special nurseries for premature infants are now accepted as essentials in Lying-In-Hospitals. The Chapple bed, and the Isolet, have made possible isolation of the premature infant, even in a general hospital nursery. Real advance in the care of the premature baby has

been made, but much remains to be accomplished. Retroental fibroplasia, first reported by Terry, is an unsolved problem, both in etiology and treatment.

Pediatrics has benefited by progress in the whole field of medicine. This is strikingly true of the research in specific diseases and the improvement in treatment that has resulted.

A considerable body of knowledge about methods of prevention of certain diseases has now accumulated, and since mortality of many of these diseases is particularly high in the younger age groups, pediatricians have adopted prevention practices with great enthusiasm and with striking results.

Diphtheria is now a rare disease in childhood since the early work of Schick, in Germany, and of Park in this country, in developing toxin-antitoxin and later introduction of diphtheria toxoid.

Pertussis is still an important disease, but its incidence in the early years of life is much less than before the widespread use of vaccines, following evidence from Sauer's work of their effectiveness in preventing or alleviating the disease. The use of antibiotics in treatment has further reduced the severity and mortality of this disease.

Small-pox vaccination is now almost universally employed. The demonstration that the occasional complication of encephalitis after vaccination practically never occurs, if the primary vaccination is done before the eighteenth month of age, has resulted in early vaccination and early protection.

Tetanus toxoid is now given routinely to infants during the first year of life. The production of preparations containing multiple biologic products has been of great advantage of immunologic practice.

During World War II, Cohn, in the Laboratories of Physical Chemistry at Harvard University, developed methods of fractionating blood. From this source, serum globulin was made available for experimental studies. The work of Janeway and Stokes showed clearly the effectiveness of gamma globulin in the prevention and modification of measles and it may be of use in the prevention of infantile paralysis.

Meningitis is successfully treated, if early diagnosis is made, by serum and antibiotics. Pneumonia, formerly, was a serious disease in infants, but like many other infections, it has yielded to specific drug therapy. Scarlet fever has been robbed of its terrors by the use of antibiotics.

The virtual disappearance of the so-called summer diarrhea in infants is one of the triumphs of preventive medicine. Dysentery or infectious diarrhea has largely disappeared as an important disease of early life. These changes have been due to many factors, primarily among which are the increase in knowledge of nutrition requirements, the pasteurization of milk, the child health movement and the better treatment of those who are sick. The last factor is due in a large measure to an understanding of the

importance of fluid and electrolyte balance gained from the early work of Gamble and later by the work of Marriot, Hartman, Darrow and many others. Also, a real contribution has been made by the use of blood transfusions and other supportive measures and, many other advances are being made in the treatment of congenital malformation of the heart, hernia, Hirschsprung's disease, intussusception, and so forth.

The improvement of the milk supply for babies has been a big factor in the prevention of illness in babies. In 1889, Koplix introduced the distribution of the modified milk formulae for infants from stations in New York City, and three years later, Nathan Strauss provided pasteurized milk free to many babies. Coit introduced certified milk in 1891, and although it has never been used extensively, it has exerted a great influence in raising the standard of all milk, and it is still leading the way.

Milk stations soon were established in many large cities. At these stations, mothers were given advice on the care and feeding of their infants. Gradually, the sphere of interest widened and they have become the modern child health centers where every aspect of the child is considered. They have, in many places, been linked closely with pre-natal clinics, evidencing the intimate association of maternal health and the health of the infant.

In association with these centers, there has been a rapid advance in the work of the visiting nurse, supplementing and interpreting the advice of the doctor given at the clinic. Child health stations have been established all over the country. Mothers have been taught better care of their babies. The pre-school child has also been included in this sphere of interest, and much has been done to improve his physical health and some assistance given to the parent in guiding his emotional life and his adjustments to community life.

Through the work of this organization and that of other organizations with similar objectives, there has been a great reduction in infant mortality all over the country. In this growth of child health movement, it is apparent that the Government is taking an increasing share in financing and planning.

Through the leadership of the pediatric societies, especially the Academy, the execution of plans and the determination of policies and procedures are now in the hands of the pediatricians.

For the practicing physician, I think all of these movements have been to his advantage, as it has made the public conscious of the importance of pre-natal and infant care, and also the necessity of regular periodic examinations of the infant and child and the importance of early immunization.

It is a fact that many people even of limited means, prefer a private physician with a personal interest in their baby's or child's welfare, than to go to an Out-patient Department or a welfare clinic.

THE PRACTICE OF MEDICINE IN THE NAVAL SERVICE*

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I feel greatly honored at this opportunity to appear before the Maine Medical Association at its Centennial Meeting. Needless to say, I was very happy to receive the invitation from your Secretary and welcome this opportunity to return to the environs of my boyhood and early education.

I have selected the topic of my presentation because of the interest amongst all medical men and women in the current need for doctors of our armed forces and the methods used to meet this need, particularly since the beginning of the Korean war. My remarks will be based on Navy experience and apply, primarily, to the Navy. However, they are not unrelated to the other services.

The term "Doctors' Draft" has been, and is, distasteful to all the profession.

Many ask: "Why has it been necessary to pass a law to force doctors to serve their country in time of need?"

Where are the services getting line officers, supply officers, lawyers, civil engineers, nurses and chaplains? Why aren't they being drafted? Are the doctors less patriotic than other educated and trained men who are required as officers? Has the profession become so soft that they are afraid of the rigors of war? Are doctors so grasping, so avaricious that they will not make personal or monetary sacrifices to serve?

The answer to these questions is "No." Certainly, the doctors are patriotic. They are not soft. They are not grasping.

One big factor in the reluctance to serve is the national feeling that this is not war. The government has talked about a "Police Action." Korea has been treated as a sideshow with "Business as usual" the motto in the country.

Numerous doctors have told me that if it were an all-out war, they would be "beating at the doors" of the Navy to come on active duty.

To answer the question about the other officers, may I say that medicine, nursing, dentistry and theology are the only learned professions in which education is not subsidized or paid for by the armed services. Practically all other officers in the Navy can be, and largely are, obtained from the Naval Academy, Reserve Officer Training Corps, or Reserve Officer Candidate Units. They are nearly all younger

men who have just finished college, usually after being deferred by Selective Service.

There are graduating medical students in the same situation, in regard to Selective Service, but their numbers are too few to meet the needs.

Numerous studies have been made, plans laid and legislation proposed to enable the armed services to subsidize medical education or to grant scholarships in return for agreement on the part of the student to serve as a medical officer after graduation and internship.

All such plans have foundered in the depths of disagreement and argument between the government, the medical schools and representatives of organized medicine.

Still, the question remains:

"Why are doctors reluctant to enter the service?"

Some say that there is not enough to do; others say there is too much to do; others say that their trained capabilities will not be utilized, that they will do non-medical work, that they will be regimented and their work directed by laymen, that there is not enough pay, that they must leave home, and so forth and so on.

I shall not attempt to argue these various points, refute or support them. However, I shall try to give you a picture of what Naval Medical Practice is like, based on thirty-six years spent in various types of duty.

Naval Medicine, as contrasted to Civilian Medicine, is concerned largely with the maintenance of health in the healthy man, rather than the return to health of the sick man. To be sure, the practice of Naval Medicine includes a very large element of treating sick, injured and wounded, but, added to this is the responsibility for maintaining the health of the Naval Service, which is a peculiar facet of Naval Medicine.

This involves more than simply preventive medicine or public health programs. It is more than routine health examinations. It involves the selection of healthy men for the service, keeping them healthy by practicing every phase of prevention, sanitation and indoctrination; caring for them if ill or injured; rehabilitating them if able to return to duty, and, finally, evaluating their capabilities, if they must be pensioned from the service.

First, the phase of Naval Medicine most closely related to civilian practice: That is duty at a Naval Hospital. The Navy has, in the United States, twenty-five Naval Hospitals, varying in size from 300 to 2500 beds. There are four hospitals overseas and three hospital ships, each of which has 700 beds.

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About 40 per cent of the Naval Medical Officers are on hospital duty. The practice of medicine in a Naval Hospital differs but little from that in any large metropolitan hospital. Assignment to a Naval Hospital is a full-time job. There are no calls to be made outside. The doctor's time is fully occupied with work in the hospital itself.

However, there is a considerable amount of work in the Out-Patient Department of the Hospital. Nearby stations or ships in port may refer men for examination, and candidates for the Navy may require special examinations. Patients who are physically unable to return to duty must be repeatedly examined, their disabilities carefully evaluated and recorded. Such duties occupy an appreciable portion of the medical officer's time.

The sex of the patient and the nature of diseases and injuries encountered, of course, are predominantly male, but with the care of dependents of naval personnel in most of our hospitals, I can assure you that there is a sizable component of women and children. Neither are the male patients all of the younger age groups. Hospital care is extended to the retired navy man, and there is a fair sprinkling of aged patients in all of our naval hospitals.

I should like to say a word about our hospital ships. I know that in the past, there has been some misunderstanding outside of the service as to the mission and type of work aboard hospital ships. During World War I and in the early days of World War II, the hospital ships were utilized almost exclusively as hospital transports, their function being to transport sick and wounded from the overseas areas to the United States or to hospitals in friendly nations.

With the inception of air transportation for wounded, late in 1942, by marine squadrons flying from Guadalcanal to New Caledonia, and its development during the continuing years of the war, the use of the hospital ship for transport purposes has been relegated to the past, except as an emergency.

The hospital ships are fully equipped floating hospitals with all of the facilities that would be found in any large metropolitan hospital. They were designed and built as hospital ships from completion of the hull. They are not converted liners serving as make-shift hospitals. They are fully staffed, with qualified specialists in the necessary branches of surgery and internal medicine. There are sufficient nurses and hospital corpsmen to care for a full load of patients. No effort or expense is spared to provide the highest type of medical care for the recently wounded marine or sailor.

The hospital ship now serves as a floating base hospital. It is mobile, in that it may be quickly and easily moved from one location to another. It may be used to support an amphibious assault by receiving patients from the beach before definitive hospitals

can be set up ashore. It may remain in the train of the fleet at a large fleet anchorage, serving as a hospital to receive patients from all ships. Or, as is being done in the present conflict, it may lie offshore, but a short distance, and receive patients by helicopter direct from the battalion aid stations of the front lines.

When the wards are filled, the hospital ship may steam to the nearest friendly port to transfer its patients to a shore hospital. During its absence, another ship will take over the station.

Medical officers serving aboard hospital ships have an enviable assignment, for it is one in which definitive surgery is available early to the wounded man. The care of the exotic diseases of the tropics and foreign countries may be seen and treated from their very inception under ideal conditions.

Hospital duty is the phase of Naval Medicine almost exclusively thought of by the reserve doctor called to active service. However, it is obvious that a hospital assignment is not available to all doctors at all times. Somebody must serve aboard the ships of the fleet, at overseas bases, with the marines and at naval stations in the United States.

What about Shipboard Duty?

All of our larger ships have at least one medical officer assigned. Many require two doctors, and, under actual combat conditions, may have up to five depending on the size of the ship and its mission. At present, battleships, cruisers, carriers, transports and some auxiliaries have two doctors. Others, ranging in size down to destroyers, usually have one doctor. Destroyers are usually grouped in divisions of four ships each and one doctor is assigned to the four ships.

It is on board ship that the naval medical officer's function of "maintaining good health" among the crew is most important. A ship crippled by loss of skilled men due to illness or injury is not an asset as a fighting unit.

This job of maintaining the crew's health takes many forms. Sanitation, inspection of food, education of crew regarding venereal and other diseases, alertness to detect the presence of illness and prevent its spread, inspection of living spaces to prevent overcrowding and violation of good housekeeping practices, scrutiny of food preparation and dishwashing procedures, maintaining immunization and diagnostic X-ray programs are but a few facets of this program. The medical officer comes to know nearly all members of the crew and watches over them.

In addition, the medical officer, of course, sees and treats all cases of illness or injury, trivial or major. If the ship is in port or in company with a hospital ship, he may transfer the seriously ill or injured patient at once. At other times, he is on his own and must carry the burden alone, whether it be the treat-

ment of pneumonia, or a coronary infarction, operation for perforated peptic ulcer or proper splinting of a major fracture. You can see that even though the medical officer may be highly trained in one specialty, he must have some knowledge of almost the entire range of medical practice.

A phase of Naval Medical Practice which is now very prominent is encountered by the navy doctor on duty with the marines engaged in combat in Korea. The Naval Medical Department furnishes all medical support to the marines. This is actual combat duty and the most rugged of all. Assignment to a marine division may entail duty as a battalion medical officer, with the responsibility for the health of 1,000 men, staff duties for planning and training, duty in a field hospital or in the evacuation system.

Supporting the fleet and the marine expeditionary force are the shore facilities of the Navy, both in the United States and overseas. The men and women stationed at these shore activities must be cared for by the Naval Medical Officer.

Naval Shipyards, Naval and Marine Corps Training Stations, Receiving Stations, Naval Air Stations, Supply Depots, Ammunition Depots, Recruiting Stations, Research Activities, Ordnance Plants, and so forth, all require the assignment of Naval Medical Officers.

The duty at Recruiting Stations and Training Stations exemplifies the part of the Navy doctor in selection of personnel. Physical examination of candidates requires careful and painstaking work. Medical Officers first ordered to recruiting duty sometimes feel they are relegated to a boresome job. However, after one or two of their "misses" are picked up at a Naval Training Station, they accept the challenge and develop an interest in the opportunity afforded to learn the many variations from a so-called normal.

Medical Officers usually stay on recruiting duty for only a year, and then are assigned to an infirmary or a hospital in the same locality.

Not the least of the advantages of recruiting duty is the time and opportunity afforded to study and to visit clinics or hospitals, as nearly all central recruiting stations are located in or near large metropolitan centers.

The new sailor or marine goes from the recruiting station to a training station. His health and welfare are now the Navy's entire responsibility. The medical officers on duty at the large training stations have various duties in maintaining the man's health. There is a large infirmary, where minor illnesses and injuries not requiring prolonged hospitalization are treated. The doctor checks the physical examination, chest X-ray, laboratory tests and various immunizations are carried out. Each training station has several medical officers, well trained in psychiatry, who, assisted by psychologists, conduct examinations from

time to time to eliminate those psychologically unfitted for Naval Service. Duty at a training station is a fertile field for the psychiatrist.

The medical officer's duties at a training station have their counterpart as regards potential officers at the Naval Academy and at the Officers' Candidate Schools.

At shipyards, ordnance depots, air bases, and so forth, the work of the medical officer, in addition to the care of naval personnel, dips largely into the field of industrial or occupational medicine. These activities employ nearly a half-million individuals. During working hours, these individuals are the responsibility of, and under the care of, naval medical officers stationed at these activities. They conduct an industrial health program for civilian employees exactly along the lines of that carried out by any large, industrial company for its employees.

As a matter of fact, we in the Navy are glad that our medical officers have this training and experience, for after all, the fleet and component ships are specialized industrial activities whose mission is destruction rather than production.

The medical officer who has acquired experience and knowledge in the prevention and treatment of industrial injuries or diseases while on duty at a naval shipyard or a large naval air station can use that knowledge in the work shops of the large carrier, in the ammunition handling room of a cruiser or in the repair shops of an aviation base on a remote Pacific island. The care and treatment of an individual who acquires metal fume fever from welding airplane parts is the same whether he be a welder at a naval shipyard or a machinist's mate on the hangar deck of the U.S.S. Boxer.

I should like to speak of the training and opportunities for training, which medical officers have in the Naval Service. At the present time, there are fourteen Naval Hospitals, which are fully approved for intern training. Graduates from approved medical schools may apply for one year of active duty in the Naval Reserve and receive intern training in one of these hospitals. Over 170 vacancies are available and filled for the intern year beginning in July of 1953. These are all rotating internships of twelve months' duration.

At the present time, the naval intern incurs no obligation to continue on active duty beyond his internship, simply by reason of having had his internship in the Navy. However, most of the interns of this coming year will be in a category of the Draft Act, requiring that they serve for a stated time by reason of their Selective Service status.

Training beyond the intern level is continuous in the service. There are approved residencies in practically all of the specialties of medicine and surgery within our naval hospitals, extending up to the neces-

sary qualifications to take the Specialty Board examinations for certification. Only in the exceptional instance would the medical officer who has just completed his internship be considered for this type of residency training. He will be expected to do at least a year, probably two years, of general duty either aboard ship, overseas or at some other station. If, at the end of this cruise, he has demonstrated an aptitude for the service and a cheerful willingness to accept some of the hardships and inconveniences of naval service, he will be assigned to residency training in his chosen specialty in a naval hospital.

If, in his years of residency training, he demonstrates aptitude and ability, he will be allowed to continue his formal training under certified specialists, both on active duty and as civilian consultants, to the end that he may, himself, become eligible for Board certification.

There are, in the regular Navy, at the present time, 315 certified specialists in all of the various fields of medicine.

This program of residency training within the service began immediately after the war. Many of our residents were interrupted in their training by the Korean outbreak, but the program is again in full swing and offers excellent opportunities for all medical officers.

However, regardless of certification or ability in one specialty, the doctor in the Navy must remain basically a Naval Medical Officer. He must accept his tour of duty aboard ship or overseas. There will be periods when the special training which he has received will not be fully utilized. He must retain his ability to practice all branches of Naval Medicine, realizing that future assignments will again bring him an opportunity to practice his specialty exclusively.

Another type of training available to the Naval Medical Officer has to do with the phases of Naval Medicine which require special knowledge and skills. There is aviation medicine, in which the aviation medical officer must have some knowledge of psychiatry, more than average knowledge of the specialty of eye, ear, nose and throat. Special training in the field of physiology and preventive medicine is required. And, by no means less important is actual training in flight operations, in order that he may be familiar with the environment and situations which are encountered by the pilots and the men for whom he is responsible. Not all flight surgeons become trained pilots themselves, but an appreciable number of our younger flight surgeons are excellent pilots and have exhibited all of the flying skills expected of our best naval pilots. They invariably are our most able flight surgeons.

Another phase of naval medicine which requires special training has to do with the selection of per-

sonnel for the submarine service, deep sea diving and for skin diving, or the underwater demolition teams (UDT's). The Medical Department of the Navy is continuously conducting research in the field of underwater medicine, as it applies to submarines and diving.

Other fields in which special training is required are in tropical medicine, arctic or frigid medicine, and, of increasing importance, biological warfare and atomic warfare.

One of the most important functions of a naval medical officer has not yet been touched upon, although it is basic and would almost appear to be self-evident. I refer to the planning and training for war. Medical officers of all ranks participate in this important phase.

The ship's medical officer must not only make plans for the participation of his Medical Department in any ship's action or material casualty, which may occur to the ship, but he must also train the personnel directly attached to his medical department in all of their duties. He must train all members of his ship's company in the basic principles of first-aid and life-saving measures. The old days when the sick and wounded were brought to the sick bay are history. The structure of naval vessels, cut up as they are into sealed compartments to provide watertight integrity, makes it imperative that *all* personnel at least know the rudiments of first-aid and the relief of pain.

The shore station's medical officer is responsible for originating plans for the passive defense of the station, the rapid expansion of his medical facilities in case of attack, the training of personnel both of his own department and of the station in health security measures, and the coordination of these plans with neighboring armed forces installations and the civil defense authorities.

At the higher echelons, the medical officer attached to staffs of fleets or marine divisions must formulate and keep up-to-date plans which can be rapidly executed in the event of the outbreak of war. These include such matters as the rapid expansion of overseas hospitals and medical facilities, the utilization of air evacuation, provisions for the care and evacuation of casualties and the disposal of the dead.

In all these facets of planning and training for war, the naval medical officer moves in a field which, up to the present time, has been entirely foreign to one which the doctor, in civilian life, encounters. The possibility of total war, of attacks on our cities and the development of civil defense plans have brought this phase of medical preparedness home to many of our civilian confreres.

How are these various types of duty related to the individual medical Officer?

The career medical officer will spend more time at sea or on foreign shore duty in his younger years and when in the lower grades.

On the average, if he spends 30 years in the Navy, 10 of those years will be on sea duty, 5 of them at a foreign shore station, and the remainder in the United States.

Beginning his career with emphasis on the clinical field, more and more, as he progresses, the preventive aspect, the maintenance of health aspect are emphasized. When he is promoted to the senior ranks, the responsibilities of command of a large Naval Hospital, senior staff duties and administrative responsibilities fall more and more to his lot.

The reserve medical officer called for a two-year tour of duty at this time usually spends one of those years at sea or overseas and one year in the United States. These young doctors invariably come from busy clinical practices. They have been seeing patients, sick people. At first, it is difficult to adjust to the concept of caring for well men, for maintaining health, rather than restoring it. They may feel frustrated and inept, and that their talents are being wasted and their specially trained abilities are not being used.

However, in my experience, the great majority of them, and I have seen and talked to a great many, accept the situation cheerfully, learn to do the everyday hum-drum duties of the junior doctor, and become naval medical officers in the real sense of the words.

The reserve medical officers who have augmented our Naval Medical Corps since June 25, 1950, are a great credit to American Medicine, and an invaluable asset to the Navy.

For the career officer or man, the Navy is a way of life, just as the farm is a way of life for the farmer or

the law a way of life for the lawyer. The regular medical officer learns this early in his career and is happy in it.

Sometimes, I have wondered what it is that makes a doctor desire to carve out a career for himself in the Navy. Is it possible to put a finger on the basic philosophy, as related to the medical profession and career determination, which motivates the young man starting out in his professional career in seeking to become a naval medical officer?

There are, of course, many factors such as security, interest in a certain phase of naval practice, background, love of the sea, opportunity to practice medicine untrammelled by the whims of patients, and so forth.

At the risk of over-simplification, I think that perhaps there is one basic fact which I have discovered in conversation with a large number of my fellows in the service. That is, they are, perhaps without knowing it, actuated by a desire to be an officer of the Navy, to serve in the branch of the armed forces of the United States of their choice, to be able to practice their profession in an unrestricted manner insofar as qualified.

If the young doctor about to enter his career tries to be *of the Navy*, rather than only *in the Navy*, he will find an opportunity for service and for hard work. He will receive rewards commensurate with that which he gives as a naval medical officer.

I want to thank the Maine Medical Association for the honor shown me in extending the invitation to present this paper. It has been a pleasure to appear before you.

On to California!

"Go West, young man . . ." is as up-to-date a piece of advice today as it was in Horace Greeley's time. More than 11,000 physicians from all parts of the country are expected to heed this counsel by attending the AMA's 103rd Annual Meeting, June 21-25, in San Francisco. This year's scientific program offers physicians an opportunity to see and hear about the newest developments in medicine.

All scientific and technical features will be located in the convenient Civic Center—with both the Scientific and Technical Exhibitions in the Civic Auditorium. The Scientific Exhibit, presenting more than 200 displays of new treatments and techniques, will provide plenty of opportunity for discussion of individual problems with the demonstrators. More than 350 commercial exhibits, including presentations by leading drug, supply and publishing firms, will make up the Technical Exhibit in the Auditorium and adjoining large Portico.

General scientific sessions will be held in the High

School of Commerce Auditorium. Scientific section meetings and motion picture films will be held in the Masonic Temple, High School of Commerce, War Memorial Veterans' Auditorium, California Hall and other buildings adjacent to Civic Center. The House of Delegates will convene at the Palace Hotel.

You should make arrangements now to attend. Watch for further details in the *Journal of the AMA*.

AMEF Contributions Exceed One Million Dollars

Contributions to the American Medical Education Foundation during the first 11½ months of 1953 totalled \$1,047,000. The present total exceeds donations received during the entire year of 1952 by \$141,000. More than 24,500 physicians contributed \$847,361 directly to 70 of the nation's 79 approved medical schools.

Plans for the 1954 campaign were discussed at the third annual meeting of AMEF state chairmen, January 24, in Chicago.

DETERMINING FACTORS IN THE COURSE OF TUBERCULOSIS*

ALTON S. POPE, M. D., Boston, Massachusetts**

It has been said that no one thing has done so much to delay our knowledge of the causes of tuberculosis as the discovery of the tubercle bacillus. While any such statement is frank hyperbole, it embodies a profound truth concerning the total causation of the disease. For though it is axiomatic that there is no tuberculosis without the tubercle bacillus, it is by no means true that the bacillus is the sole cause of tuberculosis.

Koch's inference that the perpetuation of tuberculosis depends upon the transfer of the bacillus from man to man is as valid today as it was 70 years ago. Nor is there reason to doubt that if *all* cases of open tuberculosis were promptly recognized and isolated that the disease could actually be prevented. In fact, this is a goal unlikely to be achieved in the immediate future. As a rule, cases are seldom recognized till after they have become infectious. Many never accept hospitalization or leave the sanatorium with open lesions before the completion of treatment. It is estimated that at any given time over one-half of all active cases are living at home, under conditions which tend to make isolation incomplete, if not impossible.

Since the discovery of the specific etiological agents of certain diseases and the phenomenal progress in their prevention and treatment which has ensued, there has arisen an unfortunate tendency among medical men to ignore associated or contributory causal factors. In the case of acute infections, as diphtheria or small-pox, for which specific prophylaxis is highly effective, such an attitude may be justified on practical grounds. In tuberculosis, there is danger that in over-simplification, we lose sight of the complexity of the host-parasite reaction and the multiplicity of factors which may affect it.

In measles, Panum's classical observations in the Faroe Islands made it clear that in a population unexposed to the infection for over two generations, susceptibility was practically universal. Under those conditions, the only thing required to start an epidemic was the introduction of the specific virus. In the respective islands, the epidemic ended when the susceptibles had all been attacked or so few remained that they no longer came in contact with active cases.

In tuberculosis, the situation is much less simple. Susceptibility to infection by the tubercle bacillus may be said to be general, though more intimate and pro-

longed contact is necessary than in such diseases as measles or small-pox.

Though in those diseases infection is practically synonymous with the development of disease, in tuberculosis only a small proportion of individuals infected, possibly one in twenty, ever develops progressive disease. That the attack rate varies widely according to age, sex, race and certain environmental factors is well known. Far too little consideration has been given to the role of these variables in determining the ultimate trend of morbidity and mortality among the individuals infected.

The relationship between infection and morbidity is not constant, as in measles, but varies widely with age and sex, and with a number of other variables less clearly defined. It is the influence of these other factors on human resistance which, to a large extent, determines whether the individual who becomes infected develops progressive tuberculosis, or is able to maintain an effective barrier against the disease. It is the same factors which, in infected populations, determine the trends of tuberculosis.

The nature of human resistance to tuberculosis is still far from clear. Age, sex, heredity, race and previous contact with the disease all appear to play a part. Malnutrition, fatigue and mental stress unquestionably tend to weaken the normal defenses against the disease. McDougall has pointed out that in the presence of widespread infection, acute food shortages, poverty, lack of facilities for diagnosis and treatment, the native or acquired resistance of the people appears to be the one factor which protects the majority against the epidemic occurrence of tuberculosis.

From the standpoint of tuberculosis control, the first consideration is to identify the factors which weight the balance between the invasive power of the tubercle bacillus and the resistance of the host, and, so far as possible, evaluate their relative importance in the activation of the disease.

The influence of race upon morbidity and mortality is one of the most difficult variables to evaluate. Basically, it seems to be associated with racial experience with tuberculosis. In races first exposed to the disease, tuberculosis has often become epidemic and wiped out large parts of the population before any effective resistance had time to develop. Under such conditions, the disease runs an acute course, tends to become generalized and to present a distinct pathological picture. Because primitive people first exposed to tuberculosis are usually living under very

* Presented at M. M. A. Centennial Session, Portland, Maine, June, 1953.

** Deputy Commissioner, Massachusetts Department of Public Health, Division of Tuberculosis and Sanatoria.

unfavorable social and economic conditions, it is not always possible to separate the effects of racial from environmental factors.

That tuberculosis in most countries is now on the down-swing of a long time biological cycle seems likely on the basis of existing evidence. In fact, there are many indications of such cyclical patterns in the history of the disease.

An example of the long-term course of tuberculosis in a population group is provided in the vital statistics of Sweden. About the first of the 19th century, tuberculosis became almost epidemic in the Stockholm area, while the rest of the country was relatively free of the disease. By 1850 or 1860, the mortality rates in Stockholm had fallen substantially and central Sweden had become the area of highest incidence. During the past half-century, the crest of the tuberculosis wave has moved to northern Sweden, leaving steadily declining rates in the central and southern parts of the country.

Just what part biological selection has played in the reduction of tuberculosis is uncertain, but that it is a factor can hardly be denied. Lewis and Lurie have convincingly demonstrated that strains of rabbits relatively susceptible or resistant to tuberculosis can be established in a few generations. Every clinician familiar with the disease has noted the lack of resistance of certain families when invaded by tuberculosis. In field studies, Downes has shown that families in which tuberculosis occurs have a significantly lower survival rate than families not so invaded. Can there be any reasonable doubt that such selective mortality in families with low resistance has been an important factor in the reduction of the more susceptible human strains?

Prior to the discovery of the tubercle bacillus heredity was considered, one of the major factors in the development of tuberculosis. Though temporarily eclipsed by the significance of specific infection, heredity is again recognized as an important determinant in resistance. In a study on familial susceptibility to tuberculosis, Kallman and Reisner found the morbidity among the consorts of tuberculous husbands and wives, approximately five times that for corresponding age groups in the general population, a difference which can reasonably be attributed to intimate contact. Among siblings and fraternal twins in the same families, the morbidity was eighteen times greater than at corresponding ages in unrelated children and in identical twins over sixty times greater.

To the physician who was familiar with tuberculosis thirty or forty years ago, the most noticeable thing in our sanatorium wards today is the age of the patients. Whereas tuberculosis was then essentially a disease of young people, it is, today, a disease of old people. This has generally been assumed to be a shift in age distribution, similar to that with which we are

familiar in the acute communicable diseases. The late Dr. Frost, however, found that when specific population groups were followed through five or more decades, the high mortality rates now occurring in the sixties and seventies are in fact lower than the rates those same groups suffered in their twenties and thirties. If the present high death rates in our older people are, in fact, residuals of a more massive infection to which they were exposed earlier in life, the prospect of a continued decline in our present tuberculosis mortality is greatly improved.

If the present trend in the death rate continues, tuberculosis will soon be a disease of old men. In Massachusetts one hundred years ago, the death rate in women was 40 per cent higher than in men. Today, there are 2.5 deaths among men to one in women. The reasons for this striking change are not clear, but it seems reasonable to assume that a reduction of over 50 per cent in the average number of children per family, the marked reduction in the physical work of women in the home and the relatively greater improvement in working hours and conditions for women may have contributed, not to equality, but to advantage for the weaker sex.

In addition to these variables, which may be called intrinsic factors, related to the resistance of the human host to tuberculosis, we must consider certain environmental factors. Because these variables tend to be associated with each other, their specific effects on the course of tuberculosis are even more difficult to evaluate than those of the intrinsic factors. Occupation, nutrition, housing, physical and mental strain, war and the growth of social consciousness are all believed to be definitely related to the level of tuberculosis in the general population.

The frequent association of phthisis with certain occupations was early recognized in such terms as "stone-cutter's consumption," "Miner's phthisis" and "Potter's asthma." While it is now clear that inhalation of a high concentration of silica dust is the significant factor in the development of silicosis, it required animal experimentation to show that resistance to tuberculosis is specifically lowered by the presence of silica in the tissues.

From the practical standpoint, a more potent influence of occupation on tuberculosis is the economic aspect. The association of tuberculosis with poverty is inescapable, and has at all times been one of the greatest barriers to effective control measures. There is probably no more graphic statement of this relationship than that of Whitney. Briefly, she found the death rate from tuberculosis in unskilled workers more than twice as high as among skilled workers and foremen, three times as high as in clerks and six times as high as in professional men.

The importance of an adequate diet in the treatment of tuberculosis has been recognized from the

earliest times. The relative influence of nutrition in maintaining the resistance of a normal population to the disease is not so easily evaluated. In the depression of the early 1930's, phthisiologists were quick to forecast an increase in the morbidity and mortality from tuberculosis, yet the rates continued to fall throughout that period. It is now generally believed that on account of more adequate public relief nutrition in the lower economic classes was more adequate at that time than during many periods of prosperity. It would appear that in relation to resistance to tuberculosis nutrition is a quantitative factor, and only after a critical level is reached does malnutrition become an active agent in production of the disease.

Only occasionally is it possible to separate the influence of nutrition from the other effects of a reduced standard of living. A striking example occurred in Denmark during the first World War. During the first three years, high prices induced the Danes to sell most of their meat and dairy products to the combatant countries. During that period, their tuberculosis death rate rose from 138 to 176. When the submarine blockade became effective, exports were cut off, grain could not be obtained, and the Danes were obliged to slaughter and eat most of their hogs, and to consume their own milk and butter. By 1918, the tuberculosis mortality had dropped back to 138.

No single factor in the development of tuberculosis is more difficult to evaluate than the role of housing. It is so closely associated with other conditions that make up the general standard of living that attempts at quantitative measurement have been inconclusive. It can hardly be questioned, however, that the overcrowding of slum housing facilitates the spread of infection, nor that squalor tends to depress systemic resistance to a disease like tuberculosis.

The greatest threat to the control and possible eradication of tuberculosis is widespread war. In the modern type of warfare, entire populations are subjected to the principal conditions known to favor the spread of infection and to lower resistance to the disease. Exposure, overcrowding, mingling of the sick with the well, malnutrition, physical and mental strain combine to produce an environment ideal for the spread of phthisis. Increases of 50 to 200 per cent in the mortality rates in the countries invaded during the second World War give only an indication of the toll from this one disease. Even in this country, where the general mortality continued to fall, some six or eight industrial states experienced slight rises in tuberculosis, followed by plateaus in mortality which persisted for eight to ten years. No efforts of official nor voluntary agencies can hope to stem the effects of this type of catastrophe.

To what extent does recognition of the multiple causation of tuberculosis involve a revision of our

control program? Frost has aptly pointed out that in this country, for the past half century, the biological balance has been against the survival of the tubercle bacillus; that if the present trends of morbidity and mortality could be maintained, the eventual eradication of tuberculosis would become a possibility. The past fifteen years' experience have done much to vindicate that opinion but long-time trends in the acute respiratory diseases should make us cautious of any quick solution of the tuberculosis problem. Rather, is this the time for reevaluation of the factors which have been responsible for the past gains in tuberculosis control and a reshaping of our program to meet current conditions.

Because tuberculosis is primarily a communicable disease, the prevention of infection must remain our prime objective. This means that early discovery and effective isolation of the open case should receive top priority. To be complete, supervision of the patient also includes examination and education of his entire family, the group most liable to direct infection.

During the past decade, case finding has received a tremendous impetus from the development and wide application of photofluorography. In 1952, it is estimated that some thirteen million people in this country had miniature X-ray films of the chest. Mass screening of the adult population has done much to reduce the unrecognized sources of infection, but as the level of tuberculosis falls, we are in some areas reaching a point where it is no longer a productive case finding procedure. At present, in some states, X-ray surveys are yielding less than one active case per thousand examined. At the same time, however, it becomes possible to know a larger proportion of all open cases and efforts directed to their isolation and supervision promise to become as effective a means of control as that of the discovery and supervision of typhoid carriers by health departments.

Tuberculosis case finding has little popular appeal unless it is supplemented by adequate hospital facilities. Until recently, an overall shortage of sanatorium beds has been a serious handicap to the prompt isolation of newly discovered cases. Unfortunately, the morbidity from tuberculosis has not fallen as rapidly as the mortality and with better case finding waiting lists, have, in some instances, become longer.

At the same time, the addition of thoracic surgery and chemotherapy to the sanatorium regimen have convinced many patients of the desirability of prompt acceptance of treatment. There is little prospect of surplus sanatorium beds in the near future.

It is not enough to provide sufficient hospital beds for the prompt treatment of tuberculosis. Pioneers in the sanatorium movement in this country were far-sighted enough to see that hospitalization must be provided without regard to the patient's financial status, if it were to be generally accepted. The time

has now come when we must extend this principle another step, if we are to receive full benefit from the use of our sanatoria.

Tuberculosis is pre-eminently a disease of the lower economic groups. Not only is the patient usually unable to pay for his own treatment, but also is incapable of supporting his dependents.

In most states, the responsibility for this support is assumed by the public welfare agency, in many cases at a standard below that needed to maintain optimum resistance to tuberculosis.

In a few places, the social welfare agencies are beginning to supplement the allowance to the families of tuberculosis patients, and there is no measure likely to yield greater return in securing the completion of the patient's treatment, the maintenance of family morale and the prevention of tuberculosis in the groups at greatest risk.

Among the multiple factors which have contributed to the decline of tuberculosis in this country, none is more difficult to evaluate than public health education. Its sponsors have, at times, claimed for it the major role in the 90 per cent decline in mortality during the past fifty years, whereas skeptical doctors have occasionally looked on it as a means for building country-wide health associations. Perhaps the real answer lies in the character of tuberculosis as a disease. Clinicians have long recognized that recovery depends quite as much on the patient's reaction to and understanding of his disease as on anything his physician can do for him. Furthermore, in a disease which lasts for years, instead of weeks, isolation of the patient and protection of family contacts are far more likely to be effective, if carried out by the individual than if enforced by the Health Department.

It was with these facts in mind that the founders of the National Tuberculosis Association included health education, with early diagnosis and sanatorium treatment as cornerstones in the control program. It is not too much to say that time has vindicated their decision. The educational program of the National Tuberculosis Association and its branches throughout the states has created a popular understanding of tuberculosis, which has been a major factor in securing general acceptance of our present control program. In addition to its educational value, the Christmas Seal Sale has established a sense of personal responsibility in the participants and a willingness to support legislation for sanatorium construction, case finding programs, and other essential control measures.

In the long struggle against tuberculosis, there is a tendency to give credit for the current gains to improvements in treatment. Bed rest, pneumothorax, thoracoplasty, pulmonary resection, antibiotics and chemotherapy have successively been cited as answers to the control problem. They have unquestionably contributed materially to improvement in the therapeutic regimen, have reduced the fatality and at the same time have made sanatorium treatment more acceptable to the patient. But, the great saving in life has been due to prevention rather than treatment. Figures mean little in estimating a gain of this type, but it is conservative to say that the reduction in tuberculosis in this country for the past ten years has resulted in a saving of a billion dollars for treatment alone, a sum that would be approximately matched by the saving in patients' working time.

Recognition of the multiple causation of tuberculosis does not in any sense mean that we can relax precautions for limiting the spread of infection; rather does it mean that with the reduction of infection, we can more effectively focus our attention on the individual patient and his immediate contacts, and that the private physician more than ever becomes an essential part of the case finding organization. It means that to take full advantage of the sanatoria which we have, the public must be prepared to accept responsibility for providing not only complete treatment and rehabilitation for the patient, as needed, but also assistance to his family to enable them to maintain a maximum resistance to tuberculosis. It involves a realization that the greater part of tuberculosis today is concentrated in certain parts of the population and that only by the improvement of the standards of living in such groups, in addition to case finding and treatment, can we expect to protect the population as a whole.

Finally, it should remind us that in a number of the largest countries in the world, where tuberculosis is still the leading cause of death, large parts of the populations are suffering from chronic malnutrition and periodic famine. To achieve even the beginning of control in such areas, it is first necessary to secure a degree of social and economic stability which makes normal living possible. Under the leadership of the International Tuberculosis Campaign of the World Health Organization, the task has been undertaken. If successful, it may well mark a new era in international coöperation.

OUR THERAPEUTIC TOWER OF BABEL

ROBERT W. BELKNAP, M. D., Damariscotta, Maine

"Let us go down and there confound their language, that they may not understand one another's speech." (Genesis XI-7)

It is not often that a doctor has the opportunity of preaching from a text, but the application of the above to the subject to be presented is so apropos that I cannot refrain from quoting it with reference to the confusion which has arisen and which is increasing in the number and nomenclature of drugs. As I presume most of you were, I was brought up to Pharmacopoeal and *New and Non-Official Remedies* names, to eschew proprietary and shotgun preparations and those which had not the approval of the Council On Pharmacy and Chemistry. That may have been a perfectionist attitude. Gradually one comes under the spell of the detail man and the mail and blotter campaigns and adds, little by little, proprietary preparations perhaps because of an easily remembered name or because the article has something of pharmaceutical elegance to recommend it. The degradation is insidious and each physician gradually becomes an individualist with an armamentarium differing widely from that of his fellow practitioners until there is no unanimity of opinion as to what is the best agent for any specific condition, except some of the old stand-bys. This situation would not be so bad if it remained relatively static, but several factors have come into play in recent years which have caused it to get out of hand. Let us review what some of these factors are: Federal law has ruled that names shall not have a therapeutic suggestiveness. Thus we no longer see such names as "anti-pain", "antispasmodic", "laxative No. 2". It is no longer allowable to describe a preparation by the name of its principal ingredient followed by the qualification "compound." This may have been a proper step, but any good from it is nullified by the provision that a coined name may be used. Such names are unofficial and any drug firm can apply its particular coinage to a formula which may or may not differ from that of its competitors or if it differs does so only in minor details.

In the last few years there have been developed a large number of really worthwhile new drugs, some specific cures and some excellent symptom modifiers. Where they are proprietary the manufacturers have in some instances given them names with some semblance of the true chemical ones. These have been adopted into clinical use and there has been nothing to quarrel with in their nomenclature. More frequently however they have been put out in combination with other drugs under an entirely non-descrip-

tive name, and each drug house has seemed to want to get out something a little different from that of its competitors. It is not to be denied that many of these are excellent in their own right, but the point is that first, no practitioner could evaluate them in his own practice and second, their tremendous number, their duplication and the multiplicity of their names, have created a situation where no one can possibly carry in his mind more than a few which he may choose at random or under the blandishments of the detail man. It follows that there is no real scientific approach to the choice of drugs unless one adheres to strictly N.N.R. selections.

To cite only one example of what I mean: I recently looked over the shelves of my neighborhood druggist and observed these vitamin preparations:

All In One	Cecon	Redisol
Aqua B	Dayamin	Solu-B
Beminal	Hykinone	Surbex
Betalin	Hyatole	Synkavite
B-Nat	Homacebrin	Synkamine
Cobione	Kanone	Theragran
Combex	Liagran	Unikaps
Cebitinic	Minakaps	Vitakaps
Cebefortis	Micebrin	Vitakon
Clusinal	Optilets	Viterra
Celev	Plevamins	Vi-daylin
	Rubragran	Zymadrops

(I may have missed a few) and these in combinations with calcium, iron, phosphorus and in elixirs, capsules and tablets. It is the same with almost every class of agent. This is Jabberwocky with a vengeance and we can feel Alice's frustration when she read:

"T'was brillig and the slithy toves
Did gyre and gimble in the wabe
All mimsy were the borogoves
And the mome raths outgrabe."

Such jargon tends to defeat the ends of good therapeutics.

Not Our Problem Alone

How many physicians ever go behind the prescription desk of a pharmacy? I have done so and its shelves are a perfect jumble. I have talked with many pharmacists and they have been unanimous in agreeing that something should be done. One man said to me, "I will bet there isn't one doctor in ten who has any idea what he is prescribing when he uses these proprietary names." Another said, "It is getting to be just a rat-race." As long as physicians will prescribe an article the pharmacist must stock it or be

considered unprogressive by his customers. Then he finds himself the victim of the doctors forgetfulness, and is left with unsold stock on hand. If several doctors in one locality are specifying different makers then the pharmacist must stock the makes of each, again resulting in duplication. The turnover is slower, therefore the price mark-up must be greater and the cost to the patient greater. The whole system is antiquated, inefficient and unscientific.

Possible Reforms

Certainly in any attempt to initiate reforms the pharmacists should be consulted, because both as professional and business men they should be as interested as we physicians.

Three approaches suggest themselves. First, on an individual basis. Second, by adoption of a formulary already in existence, and third, by compilation of our own formulary. In either case, but more especially in the third, it should be done by a joint committee of the Maine Medical and the Maine Pharmaceutical Associations.

A great deal in the right direction could be accomplished, especially in the smaller communities by an agreement or at least an understanding between the physicians and their neighborhood pharmacists, as has been the practice of the writer. This involves writing for drugs by their chemical names or by names in general usage not the exclusive name of a proprietor, using in preference the simple uncompounded drug as far as possible. For instance: Instead of several sizes of Aminophyllin with several sizes of phenobarbital there could be separate prescriptions for each using, say two tablets of 100 mg. aminophyllin where 200 mg. is called for, allowing the Pharmacy to stock one size only. Applying this principle to all cases it can be seen that the number of items carried in stock could be cut to about a third.

Do not prescribe by specifying maker's name. It should be possible to agree that only reliable firms should be dealt with. I am informed that in New York State it is common practice to put on the prescription "A.R.B." (Any reliable brand.)

Adopting a Formulary

There are published formularies embracing the whole range of drugs in use at some of the large hospitals. I happen to be familiar with that of the New York Hospital (Cornell Medical Center). It is a revelation to see how in a relatively small compass most of the disease states in which drugs are indicated can be covered. This probably would be the easiest procedure but too many might find their favorite items omitted for anything like universal agreement.

Compiling Our Own Formulary

This would involve a great amount of work on the part of a committee. Such a committee, certainly a joint one, would need representatives of most of the specialties. Its success would depend largely on its personnel. I do not feel that this is a minor matter and it should have the best available brains and industry in the Association. It is to be remembered that when we had need of these in the case of the Committee on Insurance they were forthcoming.

Objections

Some may take a laissez-faire attitude. Some may say that it would be too restrictive to individualism. It is my conviction that individualism has little place in the present times. Of course any formulary will require revision frequently as some agents are found wanting or are replaced by others more effective but this is not an insurmountable problem. It has been argued that we would lose the patronage of the exhibitors at the Annual Session and of our advertisers, who make a substantial financial contribution. It is true that there might be a falling off in the sale of some of their items but for those who would coöperate there could be a greatly augmented sale of certain others. Whether or not, however, should we let a mercenary motive swerve us from a clear principle?

It would be difficult to make the adoption of a formulary universal:—This is no doubt true. There are always those who hold out, as happened in the Insurance program. Rugged individualism is sometimes admirable. The greatest good of the greatest number is rather the desideratum.

There will always be calls on the Pharmacists for drugs not on the official list:—This might obtain chiefly in the case of out of state customers of which we have many in the summer. Whether the pharmacist wishes to meet these demands or not is his own problem. If he wishes to clear his shelves of deadwood or unprofitable items, save space and make quicker turnovers he may do so. It would seem that he might segregate his stock into official and non-official groups and so simplify his handling, inventorying and dispensing.

SUMMARY

There is an unwarranted number of drugs on the market, which duplicate, unessentially modify or confuse by their nomenclature. This situation makes a mockery of scientific therapy. Both the professions of Medicine and Pharmacy would profit in efficiency and financially by adopting a simplified formulary.

Some objections are anticipated and an attempt at their refutation is made.

The Journal of the Maine Medical Association

THOMAS A. FOSTER, M. D., Portland, Editor

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Proposed Merger

The recent announcement by Governor Cross that the Legislative Research Committee initiate a study of the feasibility of concentrating the three Tuberculosis Sanatoria into one central institution presents the medical profession with a somewhat revolutionary suggestion to ponder.

The treatment of people who have contracted tuberculosis has undergone important changes along both medical and surgical techniques, as has the treatment of patients with other serious infections. It is the responsibility of the practitioners of medicine to weigh carefully the success of new methods and adopt the programs most beneficial to the patients. The complete care of T. B. sufferers includes not only surgical procedures and drug regimes but also social services, family moral support and rehabilitation.

Concentrating all the sanatoria cases in one institution may reduce costs of administration and auxiliary services. That such a move will improve the overall care of the patients is another question.

We suggest that the subject warrants a patient, critical study by a general committee of citizens who could co-operate with the established Legislative Research Committee. We would like to make a second suggestion to the effect that the committee include social workers, Executives of Voluntary Tuberculosis Associations, members of the Maine Medical Association, Sanatoria Trustees and some well informed citizens. The care of our T. B. patients is a big responsibility which requires expert and sympathetic consideration not only by official bureaus but also by practicing physicians and the public-minded citizen.

Another Centennial Anniversary

On February 15, 1954, the Penobscot County Medical Society at the Bangor House in Bangor, celebrated the 100th Anniversary of the founding of the Society. A goodly company of the noble army of Penobscot County physicians and their ladies gathered for a banquet and appropriate addresses. We would like to mention at this point that the novel dinner place cards, a snap-shot or photograph of each guest taken at an early age, some at a *very* early age, introduced a gay and merry atmosphere which pervaded throughout the evening. Dr. Harry Butler, Chairman of the Centennial Committee, introduced the special guests in a gracious manner and Dr. Magnus Ridlon, President of the Society, presented the orator of the occasion.

A historical account of medical practice and the early "medical clubs" of Bangor was presented by Dr. Albert Fellows, who was thoroughly familiar with the subject. He gave a report of the formation of the Society by Hosea Rich, Weston, Bradbury, Laughton and others, who met at the home of Dr. Rich on February 15, 1854. All the original members have passed on but Doctor J. Albert Lethiecq of Brewer, the oldest living member of the Society, was present and spoke about the changes and progress over his many years of practice in Penobscot County and added his tribute to the steadfast medical gentlemen who preceded him.

An oration for the occasion, under the title of Law and Medicine, was delivered by Honorable Raymond

A. Fellows of Bangor, Justice of the Maine Supreme Court. The Honorable Judge gave a scholarly address developing the intimate relationship of the Law Giver and Healer in ancient days and the present harmony between the Lawyer, the Doctor and the Priest. In conclusion he read an original poem, a custom in after-dinner speaking too infrequently adopted in our time. The delightful and witty lines of the poem* which portrayed the activities of the present members of the Society, following as it did the thoughtful and serious part of the oration, brought the occasion to a happy ending.

We write at some length about the celebration because we believe that it brings to us a record of which we may be proud and recalls to our minds the good which men can do when they organize and dedicate themselves to the service of mankind. The purpose of the meeting was to honour the men who through diligence, integrity and conscientious efforts furnished approved medical care to the citizens of their county. This spirit within the members of the society

was a part of the medical profession and was emphasized by Sir James Paget (1814-1899).

"Reputation among the members of one's profession may rightly be sought as a great motive to self improvement, but the reputation among the public alone can scarcely be sought directly and on purpose without great risk of damage. A full measure of good public repute is certain to come without being sought to all who deserve it, whether for their knowledge, for their carefulness, laborious attention, gentleness or other good qualities but reputation as measured only or chiefly by money may be obtained by the most ignorant through self assertion, self advertisement or impudence."

We think that the Penobscot County Medical Society through their Secretary, Dr. Herbert Scribner, and his painstaking committee sought to honour at their 100th Anniversary men of good reputation which were established in the right way.

* Published elsewhere in this issue of the JOURNAL.

Is Modern Osteopathy Cultist Healing?

In 1951 the relations between medicine and osteopathy presented so many and widespread problems that the Trustees of the American Medical Association took the subject under active consideration. In June, 1952, Dr. John W. Cline of California then retiring President of American Medical Association brought the matter to the attention of the House of Delegates.

As a result a Committee was formed for "The Study of the Relations Between Osteopathy and Medicine" consisting of Drs. John W. Cline, Chairman, E. Vincent Askey, F. J. L. Blasingame, Edwin S. Hamilton and Arch Walls. That Committee made a thorough study of the problem and presented its report to the Board of Trustees, American Medical Association and they in turn reported it to the House of Delegates at their Annual Meeting, June, 1953.

The majority report of the reference committee recommended that action be deferred until June, 1954; the minority recommended immediate action. The majority report was accepted by the House of Delegates and action on the report will be in order June, 1954.

The recommendations of the special committee for this study were:

"1. That the House of Delegates declare so little of the original concept of osteopathy remains that it does not classify medicine as currently taught in schools of osteopathy as the teaching of 'cultist' healing.

"2. That the House of Delegates state that pursuant to the objectives and responsibilities of the American Medical Association which are to improve the health and medical care of the American people, it is the policy of the Association to encourage improvement in undergraduate and postgraduate education of doctors of osteopathy.

"3. That the House of Delegates declare that the relationship of doctors of medicine to doctors of osteopathy is a matter for determination by the state medical associations of the several states and that the state associations be requested to accept this responsibility.

"4. That the Committee for the Study of Relations between osteopathy and medicine or a similar committee be established as a continuing body."

The Board of Trustees also recommends that action on the report be deferred until the June, 1954, session. It is suggested that at that time the House be prepared to answer the following questions:

"1. Should modern osteopathy be classified as 'cultist' healing?

"2. Since the objectives of the American Medical Association include improvement in undergraduate and postgraduate education, should doctors of medicine teach in osteopathic schools?

"3. Should the relationship of doctors of medicine to doctors of osteopathy be a matter for determination by the several state associations?"

The report of the Committee for this study included these as findings in summary:

There are six osteopathic schools accepted by the American Osteopathic Association.

Three years of preprofessional study leading to a baccalaureate degree are required for admission.

Total clock hours of instruction in those schools averaged about 25% greater than corresponding time of medical schools.

Medicine occupied more than 90% of instructional hours.

34 states, District of Columbia and Hawaii allow practically full licensure.

6 states permit use of drugs but no major surgery.

8 states permit only manipulative therapy.

The full report of this Committee appears in *The Journal of the American Medical Association*, June 20, 1953, Vol. 152, No. 8, pp. 734 et seq.

It is hoped that the County Societies will discuss this matter and instruct their delegates to the Maine Medical Association so that its House of Delegates in April or June may instruct its delegate to the American Medical Association.

W. MAYO PAYSON,
Executive Secretary.

PENOBSCOT MEDICAL ASSOCIATION*

The old Penobscot Medics, with one hundred years behind,
Were celebrating progress, just as blind men lead the blind.
It was a sight that winter night to see them gather there,
Some came by automobile and others came by air.

When Magnus Ridlon reached the door, the stork beneath
his arm,
Doctors Adams, Sewall, Bridges, helped to keep that bird
from harm.

There were also several doctors like Coulton, James Dewitt,
Emery, Lieberman, Macdonald, who protect the bird a bit.
Doctors Shubert, Byron Whitney and maybe several others
stood around to give some courage to the dear expectant
mothers.

The friendly stork helps all these boys. It finds things on a
roof,

And carries them to hospital, and this is gospel truth.
If Ridlon's stork bird does not bring the babies in his bill,
One sometimes finds them 'neath a cabbage near the window
sill.

The doctors wait in hospital with dope for dismal pain,
For the stork bird is the love bird in this town of Bangor,
Maine.

Stork sometimes finds a baby in a Lydia Pinkham bottle,
And Kinsey says the stork can win with screeching open
throttle.

The *head* men (on the inside) are Fergus and Hedin,
While Forrest Ames will look again at things you've never
seen.

Doctors Stebbins, Barnes and Pooler, if mentally you're dead
Will look at you, and talk to you about what's in your head.
One Blaisdell is a doctor for the parts not too remote
And still another Blaisdell cures eye, ear, nose and throat.
Eugene Brown, they say, for children is as good as is the
best

While Lloyd Brown will assure you that he'll only feel your
chest.

Harry Butler, Manning Moulton, Jay K. Osler and McQuoid,
Asa Adams, maybe others, fool around the old thyroid.

Other Docs who answer phone calls for the throat, nose, eye
and ear

Are Dexter Clough and Whitworth, or this is what I hear.
When your skin gets rough and scaly and you're nervous as
a witch,

Doc Vickers, or Doc Barrett new or seven-year itch.
Some doctors specialize on skin, the reason is—they tell—
Because their patients never die, and never get real well.

In my phone book are some doctors who must tend the army
men,

"General Surgery" they call him—(he won't look the same
again),

When Butterfield, Ed. Curran, Todd, Emerson and Hill

Get through carving up the "General" he will not a thimble
fill.

If they're not enough to fix him, he can see Doc Miragliuolo,
Richard Munce or any Purinton, who can pain as aching
molar.

Robert Hughes has "General Surgery" for patient too, I'm
told,

And George Wood taps your bosom when you are young or
old.

There's also "General Medicine" (living maybe near Dow
Field),

For him get Burke and Barrett, and if pain does not then
yield,

Have Leonard Ford, George Horton, Lethiecq or Doctor
Wood,

Or if slow in convalescing, Pressey or Doc Ruhlin's good.
Young soothsayers—not forgotten—Luther Mason and "John
Bud,"

Have been around to cure 'em since most doctors were a cub.
Doctor Mason bathes in medicine, and for Bud I have no fear,
For I myself am wearing Bud's embroidery right here.

Have you got a hip unjointed, broken rib or broken leg?
Hurry Silsby towards your wigwam, or the Woodcocks

humbly beg.

They are far from being bone heads, though the specialty is
bone.

They can also cure bursitis that adopts no alto tone.

John S. Houlihan, Herb Scribner, P. S. Skinner, C. J. Taylor,
Separate the fits from fever as sure as Jack's a sailor.

Robert Kellogg, Joseph Lezburg, or Thegan (of Bucksport)
Can roll a wicked pill or two, at least that's the report.

When your child gets too "rambunctious," doesn't want to go
to school,

Or his didies seem to dampen, and the croup becomes the rule,
Albert Fellows, Frederick Emery, Ben Shapero, so they say
Can calm the troubled mother so her nerves no longer fray.
LaForest Wright in general practice with a prejudice for
feet—

Ring his bell with fallen arches and new courage you may
meet.

There's the anesthesiologist (whatever that may mean),
Doctor Thomas or Doc Dwyer make you sleep without a
dream.

If your heart gets acting dirty and you cannot get your breath
Doctor Manter, perhaps Cutler, can scare you half to death.

Memmelaar, and Robert Feeley do not help the modest man,
If you're modest, grin and bear it or swear a solemn "damn."

Mary Dietrich, Alice Shubert, are some lady "doctor men,"
If once you go to see them you will want to go again.

Who takes the place of coroners and represents the State?

* Presented at the Centennial Observance of the Penobscot
County Medical Society, Bangor, February 15, 1954.

Clinical Results* with Banthine® Bromide

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22 Published Reports Covering Treatment of 1443 Peptic Ulcer Patients with Banthine

Comprising the reports published in the literature to date which give specific facts and figures of the results of treatment

AUTHORS	No. of Patients	Chronic, Resistant to Other Therapy	TYPES OF ULCERS				RELIEF OF SYMPTOMS (Chiefly Pain)				Surgery or Complications ¹	Side Effects Requiring Discontinuance of Drug ²	EVIDENCE OF HEALING			
			Duodenal	Jejunal	Stomal	Gastric	Good	Fair	Poor	No Report			Complete	Moderate	None	No Report
Grimson, Lyons, Reeves	100	100	93	7			80	11	4		5		47		19	29
Friedman	15	15	14			1	5		4	6 ³			2			13
Bechgaard, Nielsen, Bang, Gruelund, Tobiassen	26	26	21			5	16	4	6				8	6	12	
McHardy, Browne, Edwards, Marek, Ward	162		162				136	12	11		3	1	14	9	7	129
Segal, Friedman, Watson	34	34	34 ⁴				14	13			7	2	5		8	14
Brown, Collins	117	99	117				97	7	8		5	8	55	9	8	40
Asher	77		65		7	5	52	9	16			16		9	21	47
Rodriguez de la Vega, Reyes Oiaz	5	4	5				4		1					3	2	
Winkelstein	116	116	102	8		6	102		14				53		18	45
Hall, Hornisher, Weeks	18	18	18				11		1	6 ⁵			18			
Maier, Meili	38	38	24			14 ⁶	27	7	4 ⁷				10	2	5	21
Meyer, Jarman	25	18	25				21		4							25
Poth, Fromm	37	37	37				33	3	1				33	3	1	
Plummer, Burke, Williams	41	41	41				36		5				38		3	
McDonough, O'Neil	104	100	104				63	10	31			11	4		11	89
Broders	60	60	58		1	1	35	19	6				10	1	49 ⁸	
Legerton, Texter, Ruffin	11		11				11									11
Holoubek, Holoubek, Langford	76	69	76				35	27	10		4	10	26		10	36
Ogborn	42		39	2		1	42 ⁹									42
Shaiken	48	48	48				33	10	3		2		33	10	3	
Johnston	145	145	145				143		2			2	143		2	
Rossett, Knox, Stephenson	146		141			5	146					4 ¹⁰	53			93
TOTALS	1443	968	1380	17	8	38	1142	132	131	12	26	54	552	52	179	634
PERCENTAGES		67.8	95.6	1.2	0.6	2.6	81.3	9.4	9.3			3.7	70.5	6.6	22.9	

1. Not included in tabulations.
2. Included in "Relief of Symptoms" as "Poor" and in "Evidence of Healing" as "None."
3. Four had no symptoms when Banthine therapy was begun.
4. Of which seven were penetrative lesions and five partially obstructive.
5. No symptoms were present in four.

6. Two with symptoms only; no demonstrable ulcer.
7. Three were psychopathic patients and one had a ventricular ulcer of the lesser curvature.
8. Roentgen findings after treatment period of two weeks; forty-seven had duodenal deformity.
9. All returned to work within a week.
10. In these four, after relief of symptoms, Banthine was discontinued because of urinary retention.

During the past three years, more than 250 references to Banthine therapy in peptic ulcer and other parasympathotonic conditions have appeared in medical literature. Of these reports, 22 have presented specific facts and figures on the results of treatment in a total of 1,443 peptic ulcer patients, 67.8 per cent of whom were reported as chronic or resistant to other therapy. These results are tabulated above and show:

"Good" relief of symptoms was obtained in 81.3 per cent of the 1,405 patients on whom reports were available.

"Complete" evidence of healing was obtained in 70.5 per cent of the 783 patients on whom reports were available.

In all but 9.3 per cent, relief of pain was "good" or "fair." In all but 22.9 per cent, evidence of healing was "complete" or "moderate."

During treatment, 26 patients required surgery or developed complications other than ulcer which required discontinuance of the drug before results could be evaluated.

Of the remaining 1,417 patients, only 3.7 per cent experienced side effects sufficiently annoying to require discontinuance of the drug.



*Volume containing complete references, with abstracts of 39 additional reports, will be furnished on request by

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COUNTY SOCIETY NOTES

Cumberland

Eugene E. O'Donnell, M. D., of Portland, was elected President of the Cumberland County Medical Society at the annual meeting of the society on January 7, 1954, which was held in the Maine General Hospital.

Other officers are, Daniel F. Hanley, M. D., Brunswick, Vice-President and Stanley E. Herrick, M. D., Portland, Secretary-Treasurer.

Herman C. Petterson, M. D., of Chebeague Island and Phillip S. Fogg, Jr., M. D., of Portland, were elected to membership.

Mario Stefanini, M. D., Director of the Hematological Laboratory of the New England Medical Center Hospital and Associate Professor of Medicine at Tufts College Medical School, was the speaker of the evening. His subject was Recent Advances in Hematology.

A clinic with presentation of cases by the Staff of the Maine General Hospital preceded the meeting and the cases were discussed in an extremely enlightening fashion by Dr. Stefanini.

RALF MARTIN, M. D.,
Secretary.

Hancock

Edward L. Curran, M. D., of Bangor, gave a very interesting talk on Problems in the Management of Breast Tumors, at a meeting of the Hancock County Medical Society on January 13, 1954, in Ellsworth.

The meeting was opened by the Vice President, Charles H. Knickerbocker, M. D., of Bar Harbor. William C. Luther, M. D., of West Sullivan, was elected to membership.

There were eleven members and two guests present.

A regular meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, on February 10, 1954. There were ten members and one guest present. The meeting was opened by the Vice President, Charles H. Knickerbocker, M. D. A motion was passed that Mason Trowbridge, M. D., should be the representative of the society at the centennial dinner and meeting of the Penobscot County Medical Society.

Dr. Knickerbocker requested suggestions for the program committee. It was suggested that for at least one meeting a year, members of the society be requested to present interesting cases from their practice.

Richard A. Gaillard, M. D., of Bangor, showed a navy training film on Crico-thyroidotomy and gave a short talk on Tracheotomy, which was followed by a question and answer period.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Kennebec

A regular meeting of the Kennebec County Medical Society was held at the Augusta House, Augusta, January 21, 1954. The meeting began at 7.00 P. M. with dinner served to thirty-four members and guests.

The business session was called to order at 8.00 o'clock by Wilson H. McWethy, M. D., Vice President. William J. O'Connor, M. D., Roscoe L. Mitchell, M. D., and Roland L. McKay, M. D., were appointed to draw up resolutions on the deaths of Forrest C. Tyson, M. D., and Joseph E. Odiorne, M. D.

Jay R. Plimpton, M. D., of Augusta, was elected to membership.

It was voted to send a representative to the Centennial Anniversary of the Penobscot County Medical Society on February 15.

Dr. McWethy called on Norman H. Nickerson, M. D., President of the Maine Medical Association, who responded with a few well chosen remarks and mentioned pointedly the recent medical examiner appointment.

W. Mayo Payson, Executive Secretary of the State Association, spoke briefly relative to the legislative research committee's study of public health services.

Joseph A. Marshall, M. D., of Waterville, presented a ten minute paper entitled Tracheotomy—Emergency Procedures. Senator James L. Reid of Augusta, guest speaker of the evening, was introduced by Dr. McWethy. Mr. Reid's subject was A Spoonful of Legal Medicine.

A. H. MORRELL, M. D.,
Secretary.

New Members

Androscoggin

Paul M. Beege, M. D., 80 Goff Street, Auburn, Maine.
Barbara Ferguson, M. D., 80 Goff Street, Auburn, Maine.
John P. Greene, M. D., 19 Sabattus Street, Lewiston, Maine.
Donald H. Horsman, M. D., 50 Goff Street, Auburn, Maine.

Penobscot Medical Association—Continued from page 74

Why Duffy, Wadsworth, Taylor tell of dead men and their fate.
Those medical examiners report violence and crime
Their stories make the hair rise, but they have a "lovely time."
At the Eastern General Hospital Hugh Smith and Joseph Stull,
With Wadsworth the pathologist, look for microbes toe to skull.
Doc McNeil knows every cesspool, and he also knows what's in it,
Or Doctors Hill and Irwin would be hunting every minute.
Richard Gaillard and Lloyd Berrie have the very newest touch
But one cannot appreciate when pain is overmuch.
If you go to Millinocket you may look Doc Gilman's way
And Desjardins has manner for a dark and dismal day.
Doctor Sullivan, the gossips say, has a golden bedside tongue
And even for the old, old men there is a Doctor Young.
In Oldtown, Hall and Pearson and also Theriault,
If they can't find a comfort pill there's Doctor Shapero.
The Shurmans up in Dexter can wield a lancet keen
And make one feel much better than he has ever been.
McNamara on the Lincoln Road, and Hampden's Weatherbee
Are good enough for anyone—yes even you and me.
It's a long way, down the ages, from the cave man's tiger shirt
To Hippocrates and Galen with all their grease and dirt.
It's a long, long time from days when men were chained to keep them still,
While bloody barbers sawed a leg and gave a gummy pill.
Our Doctor men in Bangor, Maine, a mighty change have seen
For they saw ether ease the pain as if it had not been.
One hundred years is very short to change coats of "blue drillen,"

Penobscot

Charles D. McEvoy, M. D., 316 State Street, Bangor, Maine.

Piscataquis

Robert C. MacDuffee, M. D., Monson, Maine.

Deceased
Androscoggin

Blinn W. Russell, M. D., Lewiston, January 31, 1954.

Kennebec

William J. O'Comor, M. D., Augusta, February 7, 1954.

York

Elmer M. Tower, M. D., Ogunquit, February 11, 1954.

And put on linen with a mask when squirting penicillin.
Paracelsus the magician, Paré the surgeon vain,
Who lived when Cris Columbus sailed along the Spanish Main.
They did not know, as Bangor Docs, about the diabetes.
They did not see anemia with liver in the treatise.
They had not heard how little glands relieve the gasping breath,
And "bowel inflammation" was to them a certain death.
In 16 hundred 66 when London had the plague
They physicked up the bowels and they bled the arm and leg.
And even Bangor doctors, in eighteen forty-eight,
When many had the cholera were not really up to date.
And when within a century, Doctors Pasteur and young Lister
Decided to wash hands and tools, all microbes felt the "twister."
Pus disappeared when hands were washed, and Dr. Wendall Holmes
Told Bangor doctors child bed deaths were less with cleaned up bones.
Oh shades of Jenner, Harvey, Paracelsus, Semmelweis!
Look down upon these doctors and give them good advice!
Former men of this society—like Laughton, Seavey, Brown,
Like Sanger, Mason, Simmons cast thy pitying glances down!
Help us, and those who treat us, so that the years ahead,
We find such hope for healthy lives we never may be dead.
Through study, or by accident, find care for polio,
Eliminate the cancer and other forms of woe.
May doctors learn from tiny glands to cure all ailing things,
And give to old men, such as I, drink from eternal springs.
May Bangor doctors keep new hearts in stock on sterile shelves
So we can have new lease on life despite our very selves.
May lives continue on their way 'til century clock runs down,
Or others bury us alive to make room in this town.

CHARLES G. PLATT, C. L. U.

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CORRESPONDENCE

To the Editor:

It is reported in the daily press that some twenty Maine towns will decide this year whether or not to fluoridate their drinking water. I am glad to have had on my desk a report of 60 towns where the people themselves, not just the City Managements, were allowed to vote on this question. In the towns in other states where a vote on the question of whether or not to fluoridate drinking water *was put up to the people* the results were two to one against it. In other words, 40 towns voted against it and 20 voted for it. I feel sure that if the anti-fluoridation side had been properly presented that the number of towns voting against fluoridation would have been even greater.

We are now having a Berlin Conference in which one of our main objectives is to get free and undictated elections for "free Europe." Certainly right here at home the citizens of Maine should have the right to vote on this fluoridation question in a free election in their own towns; a question which affects their own daily drinking water.

Thus far the money, the effective propaganda mediums including the press and radio have been on the pro-fluoridation side. This makes it difficult for us who have nothing to gain from being against it to get our views presented with equal space or anything like the same amount of time on the radio.

ENDORSEMENT NOT JUSTIFIED

Some of us medical men who are in the daily *private* practice of medicine are not sure that money spent on fluoridation of drinking water does more good than harm; we feel that a toxic poison *whose dosage cannot be KEPT under complete control* with the water works machinery of today, whose *potency increases with boiling*, and for which there is *no known antidote*, has dangerous possibilities. For me at least there are still too many unanswered questions to justify any endorsement.

I have the firm belief that much more careful consideration should be given to the long range problems, as well as the immediate one, before a highly toxic chemical is added to our drinking water supply, just because certain individuals believe that it is good for the teeth of growing children for a short time in their growing period. I believe that this highly toxic chemical, now used in some public drinking water supplies, when taken in daily minute dosages, can constitute a serious hazard to the health and well-being of all people who must drink that water.

We must keep our faith in those who are in private medical practice, who have no fear of certain health officers, who because they are not in the private practice of medicine have a different viewpoint. If a few die and others suffer damage to their vital organs because of drinking fluoridated water it will be no comfort to say that it helped the teeth of some children.

I am glad to say that there are health officers who do not believe in fluoridation and in some cities where sodium fluoride had been added to the public drinking water they have helped to throw it out along with the expensive machinery used for putting it into every glass of the public water supply.

Personally, I firmly believe that much of the good that we do in our daily private practice of medicine will be cancelled out by the bad done by the artificial fluoridation of our drinking water, if it is foisted upon more of us by a few public-health people with too much authority and by a comparatively small group of dentists who have been misguided by the enthusiasm of certain research workers who must justify the large amounts of money given to them to use.

After much study of the literature, I do not believe it will be finally proven beyond any reasonable doubt, even after more years of research, that this toxic substance when consumed with drinking water, is even good for *children's* teeth. Reputable authorities state that it cannot benefit the teeth of a child after he is eight or ten years old, and of course, *even a child is more than a mouthful of teeth*. We medical men

are concerned about *all the organs* in every person's body *not just the teeth of children*.

WHAT ABOUT THE OTHER MORE VITAL ORGANS?

What does fluoridation do to the other organs of the human body? The soft tissue organs like the heart, the lungs, the liver and the pancreas—these are also fluoridated when one drinks this poison water and being spongy they are said to take up much more of this toxic substance than the hard teeth. I am sure it can do nothing but harm in these organs and these organs are necessary to life. One can live without teeth. Many do!

For years sodium fluoride has been used as a rat poison. It causes sudden death in rats through its effect on the vital organs of the rat. This is no stuff to give to human beings on the slim evidence that some children's teeth are hardened by it. Since only 10% of the population can possibly get any benefit from putting sodium fluoride in drinking water and that possible benefit is limited to the teeth of children why should the other 90% of the population have fluoridated drinking water forced upon them?

I hope never to drink fluoridated water for I consider it dangerous. Not only do I wish to avoid being poisoned by it but I do not want to have my relatives or any of my family drink it. Thank God I live in America where I can still express my opinion and where some editors will print an honestly given opinion.

Through drinking fluoridated water you fluoride the entire person, you fluoride not only his teeth, you fluoride his heart, his lungs, his kidneys, his liver and all the other vital organs that he cannot live without.

I'm sure many who read this have no live teeth of their own. But a person can die with perfect teeth and none can live without the much more vital organs I have just mentioned.

Even if it be proven, after twenty years or more of trial, which cannot be done *without much more risk than I want* to see taken, that fluoridated water does markedly benefit the teeth of 50 or 60% of the children who drink it from infancy to ten years of age—what irreparable damage may have been done to the vital organs of the others who must drink this same water?

How much poison can a person absorb without physical or mental damage? What City father or dentist or physician is able to answer this? In what town or city in America are there many people who want to be the guinea pigs who would drink a rat and roach poison just because some believe it is good for a percentage of the children who must drink that same water. It is admitted even by a rabid pro-fluoridist that many children get no benefit whatever from drinking fluoridated water.

What city manager, mayor, selectman or other city father is willing to give those who elected him a rat poison? Most of the water consumed is by adults. Many who drink large quantities of water are old and many are sick.

What research has been done to show the effect of sodium fluoride in drinking water upon the arthritic, tubercular, or the cancerous where damage may show up years from now? Do we know its effect upon proper functioning of the nervous system or upon those with psychotic tendencies? What research has been done to show what effect sodium fluoride may have on children who are not entirely healthy or who are more than ten years old?

Not a few children have diabetes, syphilis, tuberculosis, and other serious chronic diseases. What will years of drinking fluoridated water do to them? The public has a right to know the answers to all these questions before it submits itself to this proposed mass medication. The answers to them are not yet in and until they are in fluoridation should be legally prohibited. Where the public is well informed their decisions are correct, if they are allowed to vote on the question.

ADRIAN H. SCOLTEN, M. D.,
Portland, Maine.

MAINE CHAPTER
AMERICAN COLLEGE OF SURGEONS

Meeting

Saturday, June 12, 1954

Samoset Hotel, Rockland, Maine

PROGRAM

Surgery of the hand, head injuries, carcinoma of the cervix, hypersplenism.

Dinner meeting with guest speaker, Dr. Edward Churchill, Professor of Surgery, Harvard.

All members of the Maine Medical Association are cordially invited.

EMERSON H. DRAKE, M. D.,

Portland, Maine,

Chairman,

Program Committee.

TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

Diabetes and Tuberculosis

By Elmer S. Gais, M. D., New York State Journal of Medicine, August 15, 1953.

Tuberculosis occurs frequently as a complication of pre-existing diabetes mellitus. The fact that this combination of diseases is lethal unless recognized early and treated vigorously is of utmost importance. The incidence of tuberculosis is higher in the diabetic than in the general population. Recent evidence is presented by the Philadelphia Survey in which 8.4 per cent of the 3,106 diabetics studied were tuberculous, whereas 4.3 per cent of a group of 70,767 industrial workers were found to harbor tuberculosis.

From this survey other important conclusions were drawn: (1) tuberculosis was *active* in 2.6 per cent of the diabetics and was three times as prevalent in those under 40 years of age as in those 40 or over; (2) the prevalence of active tuberculosis increased markedly with severity of the diabetes and was greater in underweight persons than in overweight; (3) in the younger age group the prevalence of active tuberculosis was much greater in those having had diabetes 10 years or more; (4) tuberculosis was much more likely to be active in diabetics than in nondiabetics.

No conclusion was reached as to the effect of degree of control of diabetes on the incidence of tuberculosis. The juvenile diabetic at present survives into the decades when tuberculosis becomes more prevalent; thus the opportunity for exposure and increased incidence of tuberculosis becomes a function of time itself. If underweight is evidence of undernutrition and inadequate control, then the increased incidence in this group may reflect the hazard of poor diabetic control.

A statistical case for the beneficial effect of improved diabetic care can be made by a comparison of the declining mortality of the diabetic from tuberculosis in the various eras of diabetic therapy, which seems to be related to the longer lasting insulin effect with better control. However, the effect of improved treatment of tuberculosis must be evaluated, particularly since the overall mortality from tuberculosis is declining more rapidly than that from diabetes.

From a presently incomplete study of several hundreds of tuberculous diabetic patients treated in Montefiore Hospital (N. Y.), under uniform supervision over the past 15 years, it appears that more thorough control of the diabetes yields a definitely higher survival rate, *almost equaling the survival rate of the nondiabetic tuberculous patient in the same institution receiving the same therapy for his tuberculosis.* This conclusion is tentative and may have to be modified somewhat in the light of stricter analysis.

What is the reason for the increased susceptibility of the diabetic to infections, in this instance, tuberculosis? Many theories have been advanced, among the latest of which is the effect of adrenal steroids on the immune reaction in tuberculosis. Overproduction of such contraindulin steroid or pituitary factors, particularly in the older age group of diabetics, may well be a determining factor in the causation of diabetes and of altered immunity. This might also explain the high incidence of true insulin resistant diabetes in tuberculosis. But in the younger age group of diabetics, deficiency of insulin itself seems to be the prime cause of diabetes. Yet this age group has a high rate of active tuberculosis. Further studies may resolve this dilemma.

The course of tuberculosis in the diabetic is usually stated to be more active, more progressive and leading to more frequent generalized spread. Many features of the pathology of the disease warrant this conclusion. Fewer, less dense pleural adhesions, rendering pneumothorax easier, less fibrosis, more caseation and a low incidence of amyloid disease, attest to the more rapid progress of the disease. There seems to be no difference in native immunity to tuberculosis in diabetics. Healed primary lesions are usual. But something oc-

curs after development of diabetes which lowers the normal resistance to tuberculosis infection, and the disease may progress rapidly.

There is no essential difference in the localization of the tuberculous infection in the diabetic and the nondiabetic. The onset is no more insidious, but it is very often missed. The old rule that "in every diabetic who is not doing well without apparent cause, suspect tuberculosis" still holds. The minimum of a semi-yearly roentgenogram of the chest is a small price to pay for early diagnosis! It is well to remember that tuberculosis may become active very frequently in the older age groups as well as in the younger.

At Montefiore Hospital there is no limitation placed on the treatment of the tuberculous patient because he has diabetes. Under proper management there is no reason to fear ketosis. Premature vascular disease in a diabetic may preclude extreme surgical procedures. But, by and large, these patients can be treated for tuberculosis almost as if the diabetes did not exist. Chemotherapy is used according to the newer concepts. The possible increase in insulin requirement resulting from isoniazid therapy is offset by the decrease from the improved febrile state, so that diabetic balance is maintained. The important principle is to treat the disease vigorously. All diabetic subjects who develop tuberculosis should be hospitalized immediately in an institution equipped to treat both diseases.

The diabetes should be treated to maintain adequate nutrition in a chronic, debilitating, febrile disease. The diabetes is rendered more severe as a rule, but a satisfactory degree of stabilization occurs even with the fluctuating course of the infection. The diet should be attractive and varied. Over- or underweight should be avoided. Most patients on enforced bed rest tend to become overweight. The vascular, neuropathic, and other complications of diabetes when encountered are treated in the usual manner.

Insulin is necessary in at least 95 per cent of the patients. The longer-lasting insulins are quite satisfactory but frequently must be supplemented. With the fluctuations in the infectious process minimal glycosuria and near normoglycemia are often difficult to accomplish, but with constant vigilance can nearly be attained. Fractional urines are used as the base for regulation, and even a slight ketosis is treated vigorously. We have had no deaths from diabetic coma.

A few practical points may be mentioned. Readjust the insulin dosage slowly. Fluctuations in the infection, changes in appetite, and the tendency for long-institutionalized patients to relax their regimes are factors in control. Above all, avoid hypoglycemia with its attendant danger of unconsciousness and aspiration of infected material with bronchogenic spread. A slight glycosuria will avoid this hazard. Whenever a persistent aglycosuria occurs, it is wise to reduce the insulin dosage promptly but gradually.

With vigorous therapy, a hopeless outlook is no longer necessary. Preliminary uncorrected analysis of the first 100 of the cases in Montefiore Hospital from 1936 to 1941 shows a five-year mortality rate of 24.2 per cent against a rate of 22.9 per cent of nondiabetic tuberculous patients. This is also evidenced by the increasing number of discharges of arrested cases, who are an excellent group of well-controlled diabetics.

The watchwords are early detection and prompt, vigorous treatment of both diseases.

(This abstract was prepared from one of the articles entitled "Current Concepts in Diabetes Mellitus" published under the auspices of the Committee on Professional Education of the Clinical Society of the New York Diabetes Association.)

(The printing of Tuberculosis Abstracts is made possible by the cooperation of your local tuberculosis and health association.)

* From Vol. XXVII, March, 1954, No. 3.

Tri-State Spring Clinical Meeting

The Academies of General Practice of Maine, New Hampshire and Vermont
Wednesday, April 14, 1954, Veterans Administration Hospital, Manchester, N. H.

MORNING SESSION

Chairman: ROGER W. MANN, M. D., President, Vermont Academy of General Practice

- 9:00 a. m. Registration
- 9:30 a. m. Movies—Pudendal Block with Demerol and Intracaine Pronestyl Hydrochloride in Ventricular Arrhythmias
- 10:00 a. m. Correlation of Metabolic, Clinical and Chemical Pictures—John H. Bland, M. D., F.A.C.P., Assistant Professor of Medicine, University of Vermont College of Medicine
- 10:45 a. m. A Management Program for the Psychosomatic Case—O. Spurgeon English, M. D., Professor of Psychiatry, Temple University School of Medicine
- 11:45 a. m. Coffee (Hospital Canteen)
- 12:00 noon Liver Disease in General Practice—Joseph M. Gambescia, M. D., Philadelphia, Pa.

Luncheon at the Veterans Administration Hospital Canteen

AFTERNOON SESSION

Chairman: HOWARD H. MILLIKEN, M. D., President, Maine Academy of General Practice

- 2:30 p. m. Nasal Allergy—Nathan E. Silbert, M. D., Lynn, Mass.
- 3:30 p. m. Office Treatment of Injury—T. B. Quigley, M. D., Assistant Professor of Surgery, Harvard Medical School
- 4:30 p. m. Hemocytopenic Reaction to Drugs—Paul Kassander, M. D., Chief of Medical Service, Veterans Administration Hospital, Manchester, N. H.
- 6:00 p. m. DINNER AT HOTEL CARPENTER, MANCHESTER, N. H.
Advance reservations required
- 7:45 p. m. Carcinoma in Situ—Benjamin Castleman, M. D., Assistant Professor of Pathology, Harvard Medical School

All members of the Maine Medical Association are cordially invited to attend. Ladies welcome. There is no registration fee.

Programs will be mailed shortly with detachable cards and envelopes to indicate whether or not you will attend the meeting and dinner.

Advertisement



From where I sit by Joe Marsh

Wish I'd Said That

You know Miss Perkins. Well, she's been driving her own car around our town for a little more than 30 years.

The other day she had a bit of trouble parking down on Main Street. Didn't quite make it the first try, so she pulled out to start over when a fellow waiting to pass started tooting his horn impatiently.

On the second try, she was still having a little difficulty, so this smart aleck behind her hollered, "Lady, do you know how to drive?" "Yes, young man," Miss Perkins answered, "I do. But I don't have time to teach you right now."

From where I sit, it's not always easy to have a good answer ready just when you need it. But when somebody tells me how to practice my profession, for instance, or to choose tea instead of a temperate glass of beer I like with dinner, I know the answer. We all have a right to our own ideas . . . and none of us like "backseat driving" from anybody.

Joe Marsh

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BOOK REVIEW

Respiratory Diseases and Allergy, by Josef S. Smul, M. D.,
1953, Medical Library Company, 232 East 15th Street,
New York 3, N. Y.

In this seventy-two page brief volume, the author devotes the first section of thirty-eight pages describing allergic diseases of the respiratory system. In his new approach to therapy, the author first groups twenty-two "allergic" respiratory diseases. These include hay fever, bronchiectasis, angio-neurotic edema and acute sinusitis—all syndromes of one disease called Respirallergy.

Now that the author has conveniently described this group, he makes the treatment streamlined and simple. Withhold milk, cream, cheese and sugar from the diet. Inject dust, ragweed and combined catarrhal vaccine; skin testing sometimes being unnecessary. Preseasonal therapy satisfies the author apparently as well as his patients. The conclusions are based on "hundreds" of cases.

It is difficult for one to understand too much logic in the entire approach of the author in this handbook. Carefully investigated pathology of the respiratory tract, as well as research in allergy, refutes some of the quick conclusions of the author. One could respect the attempt to provide "something different, something new," were there a logical basis for this study.

The section on infectious diseases adds nothing new to our present knowledge. The author ends his book with a two-page description of neoplastic diseases and treatment of the respiratory tract. Not a few surgeons might question these closing remarks in the book, "When benign growths of the lung or mediastinum are discovered and are symptomless, no treatment is indicated. When they cause distress they should be referred to the surgeon."

BENJAMIN ZOLOV, M. D.

NOTICE

Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.

Augusta General Hospital, Augusta, Maine, 1st Monday, 9.00 A. M., Leon D. Herring, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Ross W. Green, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.



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No. 4

THE INSANITY PLEA IN CRIMINAL CASES IN MAINE

FRANCIS H. SLEEPER, M. D., Superintendent, Augusta State Hospital*

The plea "not guilty by reason of insanity" is made fairly frequently in the State of Maine. In the majority of cases there appears to be justifiable grounds for the use of the plea of insanity as will become apparent as we analyze our experience. On the other hand, occasionally it would seem that the plea is used to obtain additional time for preparation of a defense; or because there is no other possible defense, the culprit having been caught red-handed in his crime; or on occasion, to postpone the actual trial to avoid having the case heard by a particular judge. Not infrequently the persons under observation frankly tell us that the whole idea of their enforced period of observation is to gain time only, or to avoid a long waiting period in a jail prior to standing trial. Let us briefly review the legal procedure when a person committed to jail on a criminal charge pleads insanity. ¹ "When a person is indicted for an offense, or is committed to a jail on a charge thereof by a trial justice, or judge of a municipal court, any justice of the court before which he is to be tried, if a plea of insanity is made in court; or he is notified that it will be made, may in vacation or term time, order such person into the care of the superintendent of either insane (sic) hospital to be detained and observed by him until further order of the court, and 'the truth or falsity' of the plea may be ascertained."

The procedure when the grand jury omits to indict

or traverse jury acquits on account of the insanity of the accused is as follows: ² "When the grand jury omits to find an indictment against any person arrested to answer for an offense, by reason of his insanity, they shall certify that fact to the court, and when a traverse jury, for the same reason, acquits any person indicted, they shall state that fact to the court when they return their verdict; and the court, by a precept stating the fact of insanity, may commit him to the department for the criminally insane at the Augusta State Hospital or to either insane hospital.

Any person so committed shall be discharged by the court having jurisdiction of the case only on satisfactory proof that his discharge will not endanger the peace and safety of the community.

When such person so discharged is on satisfactory proof again found insane and dangerous, any justice of the superior court may, by a precept stating the fact of his insanity, recommit him to the department for the criminally insane at the Augusta State Hospital or to either insane hospital."

The law governing the discharge of a person so committed to the hospital and recommitment procedure follows: ³ "Any person so committed to an insane hospital may be discharged by any justice of the superior court, in term time or vacation, on satisfactory proof that his discharge will not endanger the peace and safety of the community; or such justice may, on application, commit him to the custody of any friend who will give bond to the judge

* Read before the Kennebec County Medical Society, December 17, 1953.

of probate for the county of Kennebec, if such commitment was to the Augusta State Hospital, or to the judge of probate for the county of Penobscot, if such commitment was to the Bangor State Hospital, with sufficient sureties, approved by said judge of probate, conditioned for the safe-keeping of such insane person, and the payment of all damages which any person may sustain by his acts. When, on satisfactory proof, he is again found insane and dangerous, any justice of the superior court may, by a precept stating the fact of his insanity, recommit him to the insane hospital from which he was discharged."

Probably as a result of the preceding statutes, for many years, Maine has been quite free from "Battles of Experts" in criminal cases. One should note, however, that under Maine law "the chips fall as they may" the psychiatric report goes to the presiding superior court justice who may make it available to both prosecution and defense attorneys. Generally speaking we have made a practice of giving no medical case details, merely a terse statement, that as a result of my observation it is my opinion that the defendant was or was not insane at the time of the commission of the alleged crime; did or did not know the nature and the quality of his act or if he did know, he did not know the act was wrong. The entire medical, psychological, ward nursing, technical, and social service personnel assist in the study of such cases. Medical staff members give their opinions in order, beginning with the junior.

The psychiatrist working under this law, when called to testify, receives no fee as he is employed by the state and he testifies for whichever side wants him in accordance with the evidence he has said he is going to present. In other words, there is no possibility that monetary consideration can shade testimony.

The Maine Statutes state that: "The words 'Insane Person' may include an idiotic, non compos, lunatic or distracted person." Obviously this definition is quite vague and yet the definition of the term is of great importance as will be noted from what follows.

Weihofer says: "For a branch of learning which consists largely of definition the law is strangely lax in its use of the word 'insanity.'" Unfortunately, the word has no technical meaning in law or in medicine, and it is used by courts and legislators indiscriminately to convey either of two meanings: (1) any type or degree of mental defect or disease, or (2) such a degree of mental defect or disease as to entail legal consequences (i.e., as to require commitment to an insane institution, or the appointment of a guardian, or to avoid a contract or relieve from responsibility for crime). W. A. White commented in 1923, "The test of insanity as laid down in the law centers about three matters; namely, the knowledge of right and wrong, the existence of delusion,

and the presence of an irresistible impulse. . . . Insanity is purely a legal concept and means irresponsibility, or incapacity for making a will, or for entering into a contractual relationship, or for executing a conveyance or what not as the case may be. These tests are essentially medical in character."

Singer and Krohn define insanity as "a disorder of the mind due to disease, characterized by more or less prolonged departure from the individual's usual method of thinking, feeling or acting."

The State of Michigan has recognized a condition of insanity termed criminal sexual insanity. The statute states "Any person who is suffering from a mental disorder and who is not insane or feeble-minded, which mental disorder has existed for not less than a year and is coupled with criminal propensities to the commission of sex offenses is hereby declared to be a sexual psychopathic person."

You will recall that persons charged with crime who submit a plea of not guilty by reason of insanity are ordered into the care of the Superintendent of the Augusta State Hospital or the Bangor State Hospital to determine the truth or falsity of the plea.

As obtains in most of the states in the union, psychiatrists in Maine are questioned and testify under the so-called McNaghten Rule (1843) and our examinations are made with this rule in mind. Briefly the rule may be stated as follows: A person on trial for a crime is (1) not excused from liability on grounds of insanity, idiocy or imbecility except on proof that at time of crime he did not know the nature and quality of act he was doing or (2) if he did know he did not know the act was wrong.

If we are to be of help to the legal fraternity the psychiatrists should play the game according to their rules, otherwise there would be chaos, and so we try to comply with those rules.

Irresistible impulse is not accepted as a defense in Maine courts, i.e., in cases of Pyromania or Kleptomania, where compulsions occur to commit these crimes. About a dozen states have irresistible impulse as a defense, according to Davidson.⁸ As is well known, Kleptomaniacs will not steal in front of a policeman.

If one follows the McNaghten Rule strictly it follows that a person may be mentally ill and yet obviously know the nature and quality of his act, know it is wrong and yet be punished for his act. I agree that little satisfaction can be obtained from giving capital punishment or, as far as that goes, any punishment to a mentally ill person. What they need is treatment if there is a successful treatment. As Davidson⁹ states, "When a psychotic patient is convicted of crime, he is not thereby declared to be 'legally sane.'" He is merely held to be legally responsible; that is, answerable for his acts. What is testified to by the psychiatrist in the State of Maine in brief, is that the prisoner did or did not know the

physical characteristics of his act and the harmfulness of his act and that the particular act was wrong. The latter implies that he knew that society considered the act wrong. The problem is really whether at the time of the crime, he knew that the community generally condemned the act. Assuming that the superintendent of the Augusta State Hospital acting under Maine law should make a mistake and testify that a man was responsible for his acts when, in fact, he was insane, the man, from a practical standpoint, would be transferred, as soon as his insanity became apparent to the prison authorities, from the prison to the Augusta State Hospital by authority of the Commissioner of Institutional Services for treatment, and would stay at the Augusta State Hospital until he recovered. If his sentence expired during such treatment and he was still mentally ill, the statutes make it possible that he be committed to the hospital for a further indefinite period if he was dangerous to be at large. If the man were found to have recovered from his mental illness after commitment, he could be released by the committing court, under statutory provisions. In other words, the rights of the prisoner seem to be rather well safeguarded, and the protection afforded the community seems adequate.

I agree with Ploscowe¹⁰ that the test for liability for crime in the case of persons allegedly insane or mentally deficient should be the presence or absence of a clinically recognizable mental disorder (psychosis) or mental deficiency (imbecility or idiocy) at the time the crime was committed. Further, when a psychotic or mental defective commits a crime, he should be confined in a mental hospital until he is cured and no longer dangerous and should be discharged after a court hearing in the court which had jurisdiction of the criminal charge. This should be spelled out in Maine law. I would further suggest that psychiatric treatment should be provided for neurotics and psychopaths committed to Maine's penal institutions. A full time, well qualified psychiatrist would be an asset to these institutions.

During the past seven years, from September, 1946, to November, 1953, under the provisions of the aforementioned Maine statutes, I have observed 95 men and 10 women, a total of 105 persons charged or indicted for crimes who signified their intentions of pleading not guilty to their crimes by reason of insanity. The results of our examinations are presented in Table 1.

TABLE 1
ANALYSIS OF 105 CASES STUDIED AT A. S. H. PLEADING NOT GUILTY
BY REASON OF INSANITY

Psychosis—Not guilty by reason of insanity—hospitalized	21	
Psychosis—Knew the difference between legal right and legal wrong in opinion of examiners	2	
	<hr/> 23	
Without Psychosis—Normal intelligence	7	
Dull normal intelligence	2	
Borderline intelligence	3	
	<hr/> 12	
Without Psychosis—Mentally defective		
Moron	5	
High grade imbecile	1	
	<hr/> 6	
Without Psychosis—Alcoholism (factor in crime)	12	
Alcoholism—dull normal intelligence	3	
Alcoholism—moron	1	
	<hr/> 16	
Without Psychosis—Psychoneurosis		
Reactive depression	2	
Anxiety state	2	
	<hr/> 4	
Without Psychosis—Epilepsy		3
Without Psychosis—Psychopathic personality without psychosis		
With alcoholism (a factor in crime)	6	
With epileptic equivalents	1	
With low grade intelligence	3	
With psychotic episodes (not a factor in crime)	2	
Primary behavior disorder	1	
Without complications	28	
	<hr/> 41	
Total		<hr/> 105

Table 2 gives in tabular form the list of crimes charged against the one hundred and five defendants. Sixty-six of the 105 cases were on trial for crimes against the person and of these twenty-two (22) were so-called sex crimes. The remaining thirty-nine persons were charged with so-called property crimes. These data show the wide range of crimes represented. It should be constantly kept in mind that many so-called normal people as well as mentally ill persons commit crimes. In fact, the incidence of non-psychotic criminals certainly exceeds the incidence of psychotics who commit crimes, many times.

Table 3 gives the diagnoses and the crimes charged against those individuals whom we considered not legally responsible for their actions.

In many instances the delusional content of the patient was the direct motivation for the crime, for example, in the case of the forty-four-year-old woman charged with assault to kill her husband, she believed that her husband was in fact not her husband but some other man who had assumed the appearance of her husband and was conspiring against her, so she shot him. Fortunately he recovered. It was a pitiful sight to see him try to defend his wife on the stand. Her husband has put up with her psychotic vagaries for several years; in fact, had removed his wife from a mental hospital against the advice of the staff while she was still mentally ill.

In other cases evident organic brain changes had completely ruined the patient's judgment and produced serious character changes, particularly noticeable in the old men who molested little children.

Each of these cases constitutes a real tragedy and it would seem should have treatment and not punish-

ment. Each case history is replete with human interest. Lack of space prevents further detailed presentation of this group.

Table 4 records the diagnoses and crimes committed of the ten women studied.

I should like to briefly consider the class of people formerly classified as psychopathic personalities, chiefly because members of this group cause the most trouble in institutional practice and also because the group constitutes the largest number of persons with mental disturbances in this study.

Recently there has been considerable discussion relative to clarification of the concept of psychopathic personality, particularly in regard to the sex cases, and their differentiation from the less malignant neuroses. The new psychiatric classification of the American Psychiatric Association, 1952,¹¹ discards the term psychopath and substitutes certain other groupings, particularly "Sociopathic Personality Disturbance." I am not sure that the new classification is any improvement over the older one. The grouping has always been something of a psychiatric "catch-all," and the new classification will not change the situation. The classification follows:

1. "Antisocial Reaction — chronically antisocial individuals who are always in trouble, profiting neither from experience nor punishment, and maintaining no real loyalties to any person, group or code; frequently callous and hedonistic, show marked emotional immaturity, lack responsibility, lack judgment and rationalize their behavior so it appears warranted, reasonable and justified." (Formerly Psychopathic Personality.)

TABLE 2

LIST OF CRIMES FOR WHICH 105 DEFENDANTS SIGNIFIED INTENTIONS OF OR
ACTUALLY PLEADED NOT GUILTY BY REASON OF INSANITY

A—CRIMES AGAINST THE PERSON		SEXUAL CRIMES	
Murder	10	Indecent liberties	11
Murder and robbery	1	Sodomy	4
Manslaughter	1	Rape	4
Assault, intent to kill	14	Rape, incest, sodomy	1
Assault, battery	7	Crime against nature	1
Aggravated assault	3	Felonious, carnal knowledge of female under 14 years	1
Assault, intent to rape	2		
Assault, dangerous weapon	1	Total sexual crimes	22
Felonious assault	2	Total cases—crimes against the person	44
Assault	1		
Threatening—violence—death	1		
Contempt of court	1		
Total	44		66
B—CRIMES AGAINST PROPERTY		ARSON	
Breaking, entering, larceny	11	Burning trees, underbrush	7
Breaking, entering	1	Setting fire to lumber	1
Larceny	7	Cheating by false pretenses	1
Robbery	3		
Forgery	5		
Forgery, uttering	1		
False uttering bank check	1	Grand total	105

2. The Dyssocial Reaction—applies to individuals who manifest disregard for the usual social codes and often come in conflict with them as a result of having lived all their lives in an ab-

normal moral environment. They may be capable of strong loyalties. They typically do not show significant personality deviations other than those implied by adherence to the values

TABLE 3
ANALYSIS OF 105 COURT CASES
PERSONS FOUND NOT RESPONSIBLE FOR CRIME

A. S. H. — 1946-1953				
Age	Education	Crime	Diagnoses	Disposition
39	8th Grade	Larceny	(Dementia praecox, undifferentiated type)	Committed A. S. H.
25	8th Grade	Arson	(Dementia praecox, paranoid)	Committed A. S. H.
71	8th Grade	Indecent liberties	(Chronic brain syndrome associated with cerebral arteriosclerosis)	Committed A. S. H.
52	6th Grade	Forgery	(Psychosis with C.N.S. meningoencephalitis)	Committed A. S. H.
73	Illiterate	Indecent liberties	(Chronic brain syndrome associated with cerebral arteriosclerosis)	Committed A. S. H.
24	12th Grade	Rape (of a 72-yr.-old woman)	(Dementia praecox, alcoholism)	Committed A. S. H.
*29	Junior High	Assault and battery, razor attack on husband sleeping	(Dementia praecox)	Committed A. S. H.
39	8th Grade	Felonious assault on attorney with mallet, had gun in bag	(Dementia praecox, paranoid)	Committed A. S. H.
34	8th Grade	Murder of father	(Dementia praecox, paranoid)	Committed A. S. H.
44	10th Grade	Assault with intent to kill husband	(Dementia praecox, paranoid)	Committed A. S. H.
68	College Graduate	Assault with intent to kill	(Paranoid condition)	Committed A. S. H.
31	7th Grade	Contempt of court	(Paranoid condition)	Committed A. S. H.
26	1 Yr. Prep	Murder of mother	(Psychosis due to epilepsy)	Committed A. S. H.
56	?	Indecent liberties, boys and girls, 10-yr.-old girl	(Psychosis with organic brain disease)	Committed A. S. H.
88	8th Grade	Threatening with violence and death	(Senile psychosis)	Committed A. S. H.
57	3rd Grade	Assault with intent to kill, gun	(Paranoid condition)	Committed A. S. H.
30	1 Yr. High	Assault and battery, shot boy in leg	(Dementia praecox)	Committed Togus
91	?	Assault with dangerous weapon, shot nurse in leg	(Psychosis with cerebral arteriosclerosis)	Committed A. S. H.
86	8th Grade	Indecent liberties	(Psychosis with cerebral arteriosclerosis)	Stood trial
45	6th Grade	Setting fire to lumber	(Dementia praecox, paranoid)	Committed A. S. H.
54	6th Grade	Murder of son	(Korsakoff's psychosis, acute alcoholism)	Committed A. S. H.

* Denotes female.

TABLE 4
FEMALES — INSANITY PLEA — 10 CASES
A. S. H. — 1946-1953

1. Dementia praecox—paranoid type	Assault and battery on sleeping husband with razor
2. Dementia praecox—paranoid type	Assault on attorney with rubber mallet, gun in bag
3. Dementia praecox—paranoid type	Murder of father
4. Dementia praecox—paranoid type	Assault with intent to kill husband by shooting
5. Psychopathic personality, I.Q. 75—borderline intelligence	Assault on 5-year-old child
6. Sociopathic personality—dyssocial type	Arson
7. Epilepsy without psychosis	Assault and battery on inmate of convalescent home
8. Chronic alcoholism	Altering bank check
9. Not insane	Assault with intent to murder husband; had affair with woman, got caught
10. Not insane—drug reaction	Felonious assault on children; asthmatic

or code of their own predatory, criminal or other social group. (Formerly Psychopathic Personality with asocial and amoral trends.)

3. Sexual Deviation—reserved for deviant sexuality not symptomatic of other syndromes. (Formerly Psychopathic Personality with pathologic sexuality)—includes homosexuality, transvestims, pedophilia, fetishism, sexual sadism (including rape, sexual assault, mutilation).
4. Addiction.
 - (a) Alcoholism, (b) Drug Addiction.
 Also included in the new A.P.A. classification under Personality Trait Disturbances is the emotionally unstable personality who reacts with excitability and ineffectiveness when confronted with minor stress. His judgment may be undependable when under stress and his relationship to other people is continuously fraught with fluctuating emotional attitudes because of strong and poorly controlled hostility, guilt and anxiety. (Formerly Psychopathic Personality with emotional instability.)

When members of the aforementioned groups are accused of violation of the law, we frequently hear laymen say that anyone who displays such obviously impaired judgment must be crazy to have acted in such a manner, especially when they seem to pay no attention to the obvious consequences of their acts. The question is often raised of indeterminate sentences for such people. Psychiatrists called upon to examine one of these persons occasionally warn that such a psychopathic person may commit some serious offense, and the question is raised, "Do we have to wait until one of these persons kills or rapes somebody before he can be segregated permanently from society? Cannot something be done to prevent this kind of person from continuing to prey on society?" New York has a law permanently segregating habitual criminals.

The group designated psychopathic personalities do know that their asocial actions are wrong and in Maine, as well as in all other states, they are legally accountable and responsible for their crimes. Cleckly¹² has aptly spoken of these people as having the "mask of Sanity."

From a psychiatric point of view these patients are neither "fish nor fowl." The anti-social sociopaths are persons who are aggressive, ruthless, pleasure seeking, living in and for the present, who worry not at all about the past, and have little concern for the future, have no sense of gratitude and are without conscience, completely ignoring the consequences of their acts so far as others are concerned and many are thoroughly dangerous citizens.

Members of this group have caused more difficulty

at the Augusta State Hospital than any other group of patients. All of the mass breaks from the Maximum Security Building in the last seven years have been engineered and planned by psychopaths who were there for observation as to their sanity or lack of it, for brief periods of time. Fortunately, all of them have been recaptured within short periods of time, and they have caused no permanent damage.

The cause of the condition or conditions is not definitely known. Many of these patients have evidence of hereditary involvement as is indicated by the observation that in the case of twins who have been separated and brought up in separate environments: if one develops a criminal career, the other, in a majority of instances, also develops similar characteristics. There is also some evidence of organic brain damage in a substantial percentage of the cases, as is demonstrated by abnormal wave patterns shown in electroencephalography studies.

A majority of these persons come from broken homes. Many have unusually high I.Q.'s—although some have low intelligence. On the other hand, from a legal standpoint they have always been considered "character disorders" rather than psychotic and it has been consistently ruled that they do know what they are doing when they commit crimes and are acting of their own free will and should be segregated, or punished for their illegal actions. It must be admitted that the psychiatric treatment of these cases is most unsatisfactory in a very large majority of the cases.

It is my opinion that in many instances the perpetuation of their lives of crime and disorder is to some extent a matter of habit as we find that many of these patients start their asocial or dyssocial activities at a very early age. We frequently find that even in infancy they have records of unusually severe temper tantrums. Inasmuch as treatment is quite unsatisfactory the indication is, of course, for bigger and better research but this research is expensive and treatment as much so. Only a few psychiatrists have suggested that they have done some good in these cases, mostly psychoanalysts, working largely on a research basis. When it is considered that the average analyst can handle only about one hundred complete analyses in his lifetime, and with many thousands of psychopaths in the United States, except as psychoanalysis is used as a research tool, such an approach is prohibitive. The partial solution to the problem may be for one of the wealthier states or the federal government to establish a research institute for psychopaths. Such a program would have to be a very long range program and would be expensive. In the meantime, we shall probably have to continue in much the way we have in the past regarding the care and treatment of such cases. It is of interest that some of these patients do make fair institutional ad-

justments in places where they can be watched all of the time.

The differential diagnosis between a so-called paraphilic (perversion) neurosis and a psychopathic personality may be very difficult. If the patient has a conscience, he is primarily a neurotic and he may respond to treatment. In other words, the condition is not so malignant as obtains in the case of a so-called "idiopathic" psychopath. The major differential point between a neurosis and a sexual psycho-

path is the presence or absence of anxiety. The neurotic is anxious, the psychopath not. Sometimes this is hard to determine, psychopaths often being consummate liars. By definition psychopaths are recidivists and they constitute a problem for the prison, the mental hospital, and the parole and probation authorities.

Table 5 lists the Psychopaths included in the study, forty-one (41) in number—numerically they are the most important group.

TABLE 5
SOCIOPATHIC PERSONALITIES
A. DYSSOCIAL AND ANTISOCIAL REACTIONS

<i>Crime</i>	<i>No.</i>	<i>Crime</i>	<i>No.</i>
Murder	4	Arson	3
Assault, various degrees	6	Forgery	3
Breaking, entering, larceny	7	Vexing, etc., on telephone	1
Larceny	2	Cheating	1
		Total	27

B. SEXUAL DEVIATION

<i>Crime</i>	<i>I.Q.</i>
Peeping Tom—aggravated assault, 14-year-old baby sitter	96
Sodomy	71
Indecent liberties—several small girls	80
Breaking, entering, larceny—Transvestism (women's underwear), war veteran	107
Indecent liberties with 8-year-old girl	101
Assault and battery—5-year-old girl (borderline intelligence)	75
Statutory rape—character neurosis	86
Indecent liberties (homosexual)	113
Rape, incest (3 stepdaughters), intercourse, fellatio, cunnilinguis	83
Breaking, entering, larceny—amoral trends	96
Sodomy (pederasty), homosexual	80
Rape (6-year-old), stealing, homosexuality (patient, age 14)	87
Murder—homosexual partner—jealousy (drunk)	97
Crime against nature—homosexuality (suicide)	98
Total	14
Grand total	41

Maine has no so-called "sexual psychopath" law. In some of the states such laws exist. In most states where such laws exist they have not proven very workable. Many of these laws were written following particularly sadistic sex crimes. In an effort to develop laws which would act as more effective deterrents to this class of crime, we might keep in mind what follows. Sexual offenses may be committed by (1) normal people, (2) alcoholics, (3) mentally defectives, (4) neurotics, the so-called paraphiliacs (sexual perverts), (5) the frankly psychotic; i.e., the elderly arteriosclerotic who attacks small children; schizophrenes, etc., (6) psychopaths.

The sexual instinct is one of the most powerful instincts we have; on this is based the pro-creation and perpetuation of the race. Under certain circumstances and conditions, sexual crimes are quite certain to happen. We certainly must protect children

from sexual assault or seduction by older people. Childish experimentation is bound to occur and we need not concern ourselves too much with this normal developmental phase. One should further note that there are tremendous variations between degrees of sexual aggression. To attempt to lump all types of sexual crime into an omnibus psychopath bill does not seem to be good judgment. We do not have conclusive evidence that there is any significant increase in sex crimes. I do not like to take a defeatist attitude, but I believe there has always been and always will be sexual crimes. The differences between the psychopaths guilty of exhibitionism and its counterpart, voyeurism, on the one hand, which occurs only in immature, timid psychopaths and the sadistic rape and murder type, on the other, are certainly most marked. It has been emphasized by Guttmacher and Weihofen¹³ (quoting Uniform Crime Reports) that

the incidence of recidivism in sexual crimes is not particularly high, rape ranking 24 and other sex offenses 25 in order among 26 offenses listed. It is high, however, among the elderly (pedophilic group) whose pathology is based on hardening of the arteries of the brain or senile dementia. Children must be protected against this group and this should be done preferably in a mental institution by segregation or in a nursing home which, in fact, truly segregates. Certainly punishment is no deterrent to the psychotic or psychopath. The neurotic perverts probably are deserving of more sympathy than punishment. Most treatment, for this group, unfortunately again, is not satisfactory. Many of the perverts firmly believe that they should be left alone and be allowed to indulge in their desires with people of their own kind. From a practical standpoint, in many parts of the country this is exactly what happens so long as the pervert does not attempt to seduce the young. In New York the penalty for homosexual activity between adults is 90 days in jail, in California the same offense is punishable by 10 to 20 years in prison. Here again, it would seem that a great deal more research is indicated, not only in medical treatment, but also in relationship to penalties to be imposed.

It is factual that the average state hospital wants no part of the so-called psychopath. As near as I can find out, this is the attitude expressed by almost anyone who has any contact with them. Under the present laws and considering available facilities it does seem that the best place for them is in a penal institution so far as institutional care and treatment is concerned. In some states there is a continual shift of psychopaths from state hospitals to prisons and vice versa. The penal institution claims they are "crazy," the hospital that they are not psychotic but that they are mentally ill. The hospital also admits that there is little from a medical standpoint they have to offer, keeping in mind particularly shortage of professional personnel.

As to the defective delinquent, practically every institution has this problem. High grade imbeciles, morons, and borderline cases fall in this category. Idiots, of course, are considered legally incapable of crime. The latter usually find their way rather early into the schools for the mentally deficient. However, the school for the feeble-minded, reform schools and prisons do have this problem to contend with, and

with this idea in mind almost three years ago the State of Maine worked jointly with Vermont and New Hampshire in trying to evolve a plan for an institution for the separate segregation of this type of patient on the basis of a tri-state compact. The plan was initiated by New Hampshire authorities. Maine by statute has authorized the state to enter into such a compact with New Hampshire and Vermont, but these two states have not passed such legislation. It is hoped that eventually the three states can get together to care for this particular problem. Inasmuch as there seems little chance at the present time of Vermont or New Hampshire joining Maine in this enterprise, it might be well if Maine created a Maximum Security Building on the grounds of the Pownal State School to care for Defective Delinquents.

Maine's laws dealing with the criminally insane are fairly good from the standpoint of the psychiatrist, but clarification of the criminal law to place more emphasis on the medical aspect of the problem rather than the legal side would offer a greater degree of justice. It is fortunate that Maine has not been stampeded into a sexual psychopath law. We can afford to wait a while and profit from the experience of our neighboring states who are experimenting with such laws.

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Information Available on Medical Scholarships

Requests for information on available medical scholarships and loans for a medical education have prompted the publication of a comprehensive new pamphlet on the subject by the AMA's Council on Rural Health in coöperation with the Department of Public Relations. Scheduled for release in April, this

booklet will contain a compilation, by state, of pertinent information regarding all types of medical scholarships and loan funds now available through medical society, governmental and other special funds. Copies may be obtained from the Council on Rural Health.

THE ANESTHESIOLOGIST LOOKS AT THE ABDOMINAL OPERATIVE FIELD

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The production of a proper surgical field for major abdominal operations is a problem for both the surgeon and anesthesiologist. They must blend their specific skills for the accomplishment of the surgical task at hand. Yet, ideal operative conditions are sometimes impossible to obtain because the physical state of the patient may require that both physicians compromise their immediate aims for his ultimate safety. Operative convenience must give way to operative and anesthetic risk.

We can divide the problem of setting up the abdominal operative field into:

- I Factors that the surgeon can control.
- II Factors that the anesthesiologist can control.
- III Factors that are beyond the control of both surgeon and anesthesiologist.

I FACTORS THAT THE SURGEON CAN CONTROL

The surgeon's efforts in the production of good abdominal operating conditions often begin days before surgery. His treatments must bring the patient into optimal general condition. Acid-base balance disturbances should be corrected to avoid bowel distension and to insure regular respiration. Distension from mechanical intestinal obstruction or from adynamic ileus should be relieved if possible. The type and extent of incision should permit easy access to the organs which are to be operated upon. During surgery, gentleness and reasonable speed will lessen distension from anesthesia and tissue handling. Gentle manipulations are less prone to bring on celiac plexus and pelvic reflexes which may mar the progress of surgery under light anesthesia. Abdominal packs and self-retaining retractors are frequently of assistance. Tilting the patient may facilitate some abdominal procedures. The anticipated benefits of the Trendelenburg position will be lost if respiration is hampered by the weight of the abdominal contents falling into the thoracic cavity. In this position aspiration of regurgitated gastric material will cause persistent bronchospasm, particularly in the obese patient. The reverse Trendelenburg position and the elevated gall bladder lift position often lead to hypotension with cardiac and central respiratory depression. Sometimes when more room is needed, the surgeon may have to aspirate large cysts or distended bowel or resect a portion of the omentum.

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II FACTORS THAT THE ANESTHESIOLOGIST CAN CONTROL

The anesthesiologist's efforts also begin before surgery. His aim is to provide freedom from pain as safely as possible and yet give the surgeon as nearly ideal operating conditions as he can. He must evaluate the patient's mental and physical health in selecting his premedication, agents and methods of anesthesia. Physiologic abnormalities, such as hypoxia, acidosis, alkalosis, asthma, etc. and anatomic abnormalities such as abdominal obesity, fixed thoracic cage, emphysema, narrow costal arch and spinal deformities are important.

During anesthesia, he must consider three major factors to provide a proper operative field:

- 1) Muscular relaxation.
- 2) Bowel size.
- 3) Regulation of respiration.

1) Muscular Relaxation.

Profound relaxation of the antero-lateral abdominal muscles (Chart 1) is required for most major surgery. These muscles, which are innervated by motor nerves arising from the fifth thoracic to the first lumbar segments of the spinal cord, must be well relaxed to obtain the best operating conditions even when the incision is made at the midline.

ANTERO-LATERAL MUSCLES OF THE ABDOMEN

Rectus abdominis
External oblique
Internal oblique
Transversus abdominis
Pyramidalis

CHART 1

There are three important nervous reflexes concerned in muscular relaxation. These are:

- a) The stretch reflex.
- b) The peritoneo-muscular reflex.
- c) The expiratory reflex. ("Expiratory squeeze")
 - a) Complete muscular relaxation means a state of flaccidity or absent muscle tone. Flaccidity results from the breaking of the efferent motor limb of the spinal reflex arcs supplying the abdominal muscles. Blocking of the sensory or afferent portion of the arcs will not give complete relaxation since the anterior horn cells may still receive impulses from higher centers. When the stretch or proprioceptive spinal reflexes, which are responsible for normal muscle tone, are intact, any stretch of the abdominal

wall muscles by retraction will increase their tonic activity.

b) The peritoneo-muscular reflex is believed by some to be a part of the stretch reflex. By this reflex, stimulation of the peritoneum produces spasm of the abdominal muscles. The tense abdomen of peritonitis demonstrates this local phenomenon. Peritoneal stimulation by retraction or handling brings forth reflex spasm under light anesthesia especially with agents which do not effectively depress spinal reflexes. Both the above reflexes may be broken or depressed by local anesthetics, general anesthetics such as ether or cyclopropane, or by large doses of relaxants.

c) We can best understand the expiratory reflex and the workings of the abdominal musculature by observing the breathing of patients before and during anesthesia with various anesthetics. As the healthy awake patient lies supine on the table, the observer will note that inspiration is done by the diaphragm and the external intercostal muscles. The thorax is expanded while the abdominal muscles passively rise with diaphragmatic descent. Expiration is entirely passive. If ether is now administered to the plane of light surgical anesthesia, the observer will note that even though respirations are regular, expiration is active. The abdominal muscles contract to compress the abdominal contents with each expiration. The lower ribs are seen to press in due to the activity of the internal intercostal, rectus, oblique and transversus abdominis muscles. This is the "expiratory squeeze." The abdominal viscera are squeezed as if the patient were forcing air out of the lungs with great difficulty. Some surgeons speak of this as "pushing." As anesthesia is deepened to the plane of deep surgical anesthesia, it will be seen that the "expiratory squeeze" recedes up the abdomen and is lost when the paralysis reaches the upper thoracic segments. The stretch and peritoneo-muscular reflexes are depressed. Tone in the abdominal muscles is practically gone and respiratory impulses from higher centers have little or no effect on the muscles.

With thiopental sodium and cyclopropane, the "expiratory squeeze" is seen as soon as the patient is quietly asleep in almost every instance. Thiopental is a powerful depressant of the respiratory center but does little to depress spinal reflexes or the "expiratory squeeze." During surgical stimulation the tone of the abdominal muscles remains high even when an overdose of thiopental is given and passive controlled respiration is performed. Artificial respiration by the anesthesia apparatus obviates abdominal expiratory activity but spasticity from stimulation of afferent fibres in the operative field persists. Cyclopropane does depress spinal reflexes but the "expiratory squeeze" remains almost to the depth where respiratory arrest from central depression occurs. This

agent is said to cause an ascending segmental paralysis as with ether but, if it does, this property is difficult to utilize since the margin between good abdominal relaxation and serious respiratory depression is extremely narrow. Controlled respiration with cyclopropane will usually produce an excellent operative field. Small doses of relaxants may be added if it appears that the tone of the muscles remains high.

Relaxants are reputed to be excellent agents for the production of profound abdominal muscular relaxation but we cannot agree that these drugs are *excellent* since they must be used in very large doses to suppress the potent "expiratory squeeze" during any light general anesthesia. Respiratory depression to an extreme degree or even arrest must be produced to secure proper relaxation for major surgery in the average patient. In the robust patient, even lesser procedures may require total paralysis. Respirations must always be assisted or controlled when relaxants are used during abdominal surgery.

Spinal anesthesia of the classical type gives excellent relaxation because it prevents both the tonic and respiratory functions of the abdominal muscles in the paralyzed region. When the normal patient is permitted to remain awake with a level of paralysis extending to the umbilicus, one can see that the "expiratory squeeze" is absent both above and below this line. If the patient is now given supplementary thiopental or cyclopropane, the squeeze will be seen above the level of paralysis. Thus when supplementary agents are used the paralysis had best include all nerve roots supplying the abdominal wall if ideal relaxation is needed for difficult surgery. If the level is too low, squeezing will push bowel into the field and maximal room will not be provided for the surgeon. High levels are not necessary for less major procedures in the lower abdomen or in those patients whose muscles have been stretched by pregnancy, tumors or ascites. "Dilute solution" spinal analgesia will not block the motor impulses producing the squeeze when active expiration is present from either disease or light general anesthesia.

Regional blocks of the nerves supplying the abdominal wall may be used when required by the precarious state of the patient. Abdominal wall block as commonly performed in this country is grossly inadequate for most major surgery. The more extensive English technic as described by Dodge¹ is better but it is still limited in scope especially in the obese patient. Bilateral paravertebral or posterior intercostal block of the sixth through twelfth thoracic somatic nerves gives good relaxation but is time-consuming and unpleasant for the patient unless he is asleep during the performance. These technics do not block all visceral sensory impulses which are of importance in the production of a good field. Anterior or posterior splanchnic block may be added to

the above technics to block autonomic pathways but such multiple needlings seem more like an anesthetic exercise than a proper anesthetic procedure except under unusual circumstances.

We are interested in the problem as to why active expiration begins under light anesthesia but we still do not know the cause. The patient breathes as if he were experiencing bronchospasm and yet bronchodilators do not improve respiration. This phenomenon may be due to a heightened activity of the deflation portion of the Hering-Breuer reflex mediated by the vagus nerve. All three reflexes which I have described may become more active when the inhibitory controlling influence of the cortical and other higher centers is removed by light anesthetics. If we could eliminate these enhanced reflexes without relaxants we might be able to produce excellent relaxation with light gaseous or intravenous agents. Ganglionic blocking agents may offer help in this problem.

2) Bowel Size.

Although the shape of the peritoneal cavity may interfere with the operative field as in the scoliotic or kyphotic patient or in those who have a narrow costal arch, this is by no means the most difficult problem. Our greatest problem is distended bowel.

Distension is promoted by inhalation anesthetics at depths commonly employed for prolonged major surgery. Tracheal intubation will help by permitting a lighter plane of anesthesia. Curariform drugs tend to produce distension. Intravenous morphine will combat this side effect but an added narcotic is often undesirable during intravenous or inhalation anesthesia. Hiccups, retching and air swallowing during induction, or positive pressure in the anesthesia apparatus may cause gastric distension. A Levin tube will remedy this condition. Hypoxia produces bowel distension.

Spinal anesthesia will usually decrease the size of normal or moderately dilated bowel to make more room available for the operator, but it may not reduce bowel size in the presence of severe widespread distension from mechanical obstruction or from long-standing adynamic ileus. Some physicians fear bowel perforation from increased peristalsis with this method but viable tissue should not perforate. The risk of this accident is probably little increased with spinal anesthesia since obstruction itself promotes strong waves of peristalsis in the proximal bowel segment.

3) Regulation of Respiration.

Proper control of the respiratory exchange to protect the patient and yet facilitate abdominal surgery presents a tremendous challenge to the anesthesiologist. Hypoxia requires caution in the use of depressant premedicant drugs. Bronchodilators and the avoidance of morphine are of value in bronchospastic conditions. Sometimes, in spite of excellent muscular

relaxation and bowel contraction, irregularities in the rate and depth of respiration may make surgery difficult. Respiratory obstruction, hypoxia and carbon dioxide excess will disturb the field. The Trendelenberg position or improper packing of the bowel may provoke forceful diaphragmatic contractions. When costal activity is limited from disease or paralysis, the diaphragm may make deep excursions into the abdomen. Yet a predictable regular action of the diaphragm, even though of long excursion, bothers the surgeon much less than irregular shallow breathing since the surgeon can coordinate his movements with the regular rise and fall of the field. Deep anesthesia with ether often produces poor operative conditions because of jerky, irregular respirations. A lighter plane with less relaxation will often improve the situation.

Spinal anesthesia alone offers a quiet respiratory rate and depth. When thiopental-nitrous oxide-oxygen is employed as a supplementary agent during middle and upper abdominal surgery, the respiratory tidal volume may be decreased because of the extent of paralysis and because thiopental produces shallow breathing at a normal or slightly more rapid than normal rate. Morphine or meperidine (Demerol) will induce slow deep breathing. By using small amounts of thiopental along with a narcotic, the anesthetist can often adjust the rate and depth of respiration so as not to injure the patient or disturb the operation.

Cyclopropane induces quiet regular respirations but its tendency to central respiratory depression with carbon dioxide retention must be kept in mind. One of our best methods for insuring smooth diaphragmatic movements is to administer this gas by controlled respiration with or without a relaxant. Absolute stillness in the field can be assured during difficult maneuvers.

Reflex respiratory disturbances are common during light general anesthesia especially with ether. Traction on the pelvic organs may cause laryngospasm and possibly respiratory arrest. The celiac plexus reflex, elicited by manipulations within the upper abdomen, produces similar difficulties. An endotracheal tube will prevent laryngospasm but gentleness in manipulation and deepening the anesthesia are the best methods of preventing or treating such disturbances. These reflexes are less prone to occur when cyclopropane and curare are administered. Only the cardiovascular effects of these reflexes, such as hypotension and bradycardia, are seen with spinal anesthesia.

III FACTORS BEYOND THE CONTROL OF BOTH SURGEON AND ANESTHESIOLOGIST

Some obstacles in the operative field are beyond the control of both surgeon and anesthesiologist.

Untreatable distension, obesity, massive adhesions and large solid tumors or bony abnormalities will hamper the surgeon. Patience alone can solve these problems. There is one further complication which is only occasionally seen in the extremely obese patient. When a long midline incision is made, the heavy abdominal wall falls apart facilitating exposure during surgery but making closure difficult. In this situation, surgeons and assistants with large paunches find them of especial value in bracing that of the patient against their own to conclude the surgery.

SUMMARY

The anesthesiologist has viewed the abdominal operative field from the standpoint of the factors that both he and the surgeon can control. Some problems which are beyond their control can be solved only by patience and diligence.

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MECKEL'S DIVERTICULUM WITH INTESTINAL OBSTRUCTION

Case Report

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This patient, a 33-year-old white female, was admitted at night with chief complaint of cramps in mid and upper abdomen which had troubled her for about 24 hours previous to admission. Routine blood count revealed 4,860,000 Rbc., 10,300 Wbc., Hb. 93%, 80 Polys., 20 Lymphs. The urinalysis showed nothing remarkable. T. P. R. was 98.4, 96, 20. There was a moderate amount of abdominal distension present, and despite relief obtained by evacuation of the lower bowel with a soap suds enema, the patient began to vomit large quantities of dark green fluid about two hours after admission. For the relief of persisting pain Demerol 100 mgms. was given and the patient had a fairly good night. Enema was repeated in the morning and further relief from distension was noted. A course of S.R. Penicillin 300,000 units every 4 hours was started.

X-ray studies the following two days showed a normal chest; flat plate of abdomen revealed a loop of distended small bowel in the left upper quadrant, another high in the mid abdomen, thought to be due possibly to volvulus. No other abdominal pathology was noted by X-ray.

The patient appeared to improve with decreased distension and cessation of vomiting. Some nourishment was taken by mouth. However, on the afternoon of the third day in the hospital vomiting occurred again and the abdominal tenderness, more severe when she moved about, increased. A swelling, formerly rather localized in the left upper abdomen, became generalized. A solution of 5% dextrose in normal saline was given intravenously for relief of dehydration.

Exploratory laparotomy was decided upon. Accordingly the abdomen was prepared with Tr. Zepharin, and under general anesthesia a left para-median incision was made. The intestine was traced to obstruction—a Meckel's diverticulum about 2 feet from

the ileo-cecal valve, which adhered to the posterior wall of the abdomen, forming a firm constricting band causing complete obstruction. Most of the small bowel was distended but beyond the constricting band the intestine was collapsed. Supportive intravenous and Vitamin therapy was carried out during surgery. A Levine tube was introduced into the stomach and the patient was returned to her room in good condition.

Postoperative pain was fairly well controlled with Morphine sulfate gr. 1/6 p.r.n. The penicillin 300,000 units every 4 hours was continued and one Prostigmin amp. was given every 2 hours. Intravenous feedings were administered as indicated by the patient's condition. Wangenstien apparatus was attached to the Levine tube and constant drainage established.

The following day a milk and molasses enema was given; a large constipated stool, and relief of distension resulted. There were several liquid stools during the day. The patient was ambulant on the first postoperative day. Distension recurred frequently but was relieved by enemata for a couple of days. This measure then became no longer effective. Enterostomy was then decided upon. This was carried out under spinal and local anesthesia, through a right lower rectus incision. One loop of small bowel was brought out and two Wangenstien enterostomies were made, through the proximal opening an enterostomy tube was inserted in the direction of the stomach, and through the distal opening in the opposite direction. Irrigation of that section of the bowel with normal saline was done and flatus returned. The two tubes were brought out through the lower angle of the incision which was then closed with chromic catgut and reinforced with stainless steel wire. The tubes were connected with Wangenstien apparatus. Periodic irrigation of these tubes with weak solution of

peroxide and water was done during the next 48 hours. The patient showed rapid improvement and within 24 hours was taking nourishment well in increasing amounts. Following the enterostomy Penicillin 300,000 units every 4 hours, Prostigmin amp. 1 every 2 hours, Streptomycin 0.5 gm. every 12 hours and Demerol 50-100 mgm. for relief of pain were given. The patient was ambulant on the second postoperative day.

On the fifth postoperative day the tubes came out

spontaneously following which there was little drainage and the wound healed rapidly and well. There were repeated episodes of distension but normal evacuation was well established by the 8-9th day. The patient was discharged in good condition on the fifteenth day following the second operation. On subsequent check-ups she showed continued uninterrupted progress and six months later there was no indication of any further difficulty.

ACUTE MYELOGENOUS LEUKEMIA SIMULATING ACUTE APPENDICITIS*

L. R. CHAREST, M. D., A. I. C. S.** and C. LAWRENCE HOLT, M. D.***

This case deserves attention because an intensive search of medical journals revealed no articles on acute myelogenous leukemia starting with pain in the right lower abdominal quadrant, simulating appendicitis.

REPORT OF CASE

Mrs. C. B., a white woman aged 57, was first seen at her home at about 5 p. m. on May 16, 1951. She stated that she had been perfectly well up until the morning of that day, when a steady pain developed across the midabdomen and gradually settled down to the right lower quadrant. This pain increased in intensity during the day. The patient lost her appetite but had no nausea or vomiting. There had been one bowel movement in the morning but none since. There were no urinary disturbances.

An inventory by systems revealed no abnormalities. The patient had 3 children. She did not smoke or drink. There was no past history of illnesses, operations or injuries. The family history was irrelevant.

Physical examination revealed the patient to be well developed and well nourished, but pale and in evident distress. She weighed 190 pounds (86.2 Kg.). The results of examination were entirely negative except for a temperature of 101.3 F., a regular pulse rate of 100, a blood pressure of 120 systolic and 80 diastolic, pale conjunctivae and an edentulous mouth. The abdomen was round and rather large; it moved evenly with respirations, except for a slight diminution in the right lower quadrant. In this area there was definite spasm but no rigidity. Acute tenderness in the right lower quadrant prevented deep palpation.

The remainder of the abdomen was normal. The liver and spleen were not palpable. There was no

mass or free fluid. Rovsing's sign was positive. Rectal examination revealed acute tenderness high on the anterior wall. A diagnosis of acute appendicitis was made, and the patient was sent to the hospital for operation.

Laboratory analyses gave the following results: red blood cells, 2,710,000 per cubic millimeter, with 60 per cent hemoglobin; white blood cells, 9,300 per cubic millimeter, with 60 per cent polymorphonuclears and 40 per cent lymphocytes. The blood was of Type AB and was Rh positive. Urinalysis gave negative results. The cause of the anemia was not explained at this time.

On the basis of the acute abdominal conditions the patient was prepared for operation. Spinal pontocaine-dextrose and pentothal anesthesia was employed. The abdomen was painted with zephiran, draped and entered through a McBurney incision. When the peritoneum was opened a small amount of clear fluid was present. The base of the cecum showed some edema and was delivered into the wound. The appendix was not enlarged, measuring approximately 6 by 0.5 cm., and was only mildly congested and edematous. It became apparent that the appendix was not the organ responsible for the acute symptoms and signs. The appendix was removed as usual, and further examination of the cecum and the distal part of the ileum was carried out. The surface of the cecum at the ileocecal juncture showed considerable edema and surface congestion. Palpation of this area revealed a raised, boggy induration in the vicinity of the ileocecal juncture, with a central crater that might have corresponded to the lumen of the ileocecal valve. The induration extended around the central crater for a distance of 4 to 5 cm. This edematous, indurated, elevated area within the lumen of the cecum, involving the ileocecal juncture, was approximately 1 to 1½ inches (2.5 to 3.7 cm.) away from the base of the appendix. The intervening wall of the cecum, between the ligated base of the appendix and the indurated area about the ileocecal juncture, was relatively soft, which suggested that the

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indurated area was not directly related to the appendix. The indurated area was freely mobile on the posterior abdominal wall, and there were no nodes in the vicinity. The nature of this intracecal lesion was not apparent, and it was deemed inadvisable to open the cecum to obtain a biopsy specimen because of the intense edema already present and the possibility that edema might spread and cause disruption of the opening. The abdomen was closed in layers as usual, and the patient was returned to her room in good condition. It was decided to treat this acute condition conservatively through the acute stage and then, at the first opportunity, to reinvestigate it completely.

The postoperative course was stormy and was marked by bouts of fever, the temperature going up to 102 and 103 F. for the first four days, then gradually decreasing by lysis after the fifth day. On May 18 a leukocyte count showed 10,600 cells per cubic millimeter of blood, with 50 per cent polymorphonuclears, 45 per cent lymphocytes and 5 per cent monocytes. Starting on the first postoperative day, the patient received 500 c.c. of blood each day and was given penicillin and streptomycin. On May 19 the temperature was still elevated, but peristalsis was good and the abdomen was soft. The patient had her last transfusion on May 20. Her general appearance was improved, and her appetite was returning. On May 21 streptomycin was stopped. On May 22 a white blood count revealed 12,450 cells per cubic centimeter, with 63 per cent lymphocytes, 35 per cent juvenile cells and 2 per cent monocytes. The neutrophils had toxic granules. On May 22, 23, 24, 25 and 26 the temperature gradually leveled down almost to normal and the patient was ambulatory. On May 27 the temperature again rose to 101 and 102 F.; on May 30 it was 103 F. A complete blood count on June 1 showed 4,000,000 red cells per cubic millimeter, with 75 per cent hemoglobin and a color index of 0.9; there were 16,800 white cells per cubic millimeter, with 5 per cent polymorphonuclears and 95 per cent lymphocytes. On May 28, after the second rise in temperature, antibiotic therapy was again started with penicillin, sulfasuxidine and aureomycin. On June 1, since it was quite evident that this patient was suffering from a severe blood dyscrasia, possibly acute aleukemic leukemia, and since facilities for studies of the bone marrow were not available at this hospital, the patient was transferred to the Maine General Hospital for further investigation. She was admitted there on June 1 and discharged on June 30. During the first five days of her hospitalization there the patient was acutely and severely ill, with a swinging temperature running as high as 104.2 F. and associated with tachycardia, the pulse rate reaching 120 per minute. The respirations were rapid and labored and varied from 20 to 48 per minute. Blood studies revealed a red cell count of 2,810,000 per cubic milli-

meter with a hemoglobin level of 56 per cent; the white blood cells numbered 16,200 per cubic millimeter; the hematocrit reading was 27, and the smear corpuscular hemoglobin value was 28. The platelets appeared slightly increased on smear. A peripheral smear revealed 32 per cent blastocytes, 23 per cent adult lymphocytes and 43 per cent adult neutrophils distributed as follows: 1 per cent segmented cells, 8 per cent metamyelocytes, 33 per cent myelocytes and 1 per cent premyelocytes. Two per cent of nucleated red blood cells were present. The urine was essentially normal except for 25 mg. of albumin, rare fine granular casts and rare red blood cells. The value for blood urea nitrogen was 17 mg. per hundred cubic centimeters, and that for fasting blood sugar was 130 mg. A roentgenogram of the chest was essentially normal. A biopsy of sternal bone marrow was done on June 1; it revealed 84 per cent myeloblasts, 3 per cent promyelocytes, 4 per cent myelocytes, 1 per cent eosinophils, 1 per cent lymphocytes and 7 per cent normoblasts. The impression was that of acute leukemia, probably of the myelogenous type. Because of the fever, a blood culture was taken and the patient was started on large doses of aqueous penicillin and dihydrostreptomycin. She did not improve, and on the fifth hospital day she was started on ACTH, the average dose varying from 80 to 110 mg. per day.

On the second day after institution of this therapy there was a dramatic improvement in the patient's condition. The temperature fell from 103 to 98.6 F.; the pulse rate decreased from 120 to 80 per minute and the respiratory rate from 48 to 20 per minute. The anemia was treated by the administration of six transfusions of whole blood, 500 c.c. being given each time. After ten days of ACTH therapy a second sternal bone marrow biopsy was done in an effort to evaluate the improvement from the laboratory point of view. It is of interest that there was very little change; the proportion of myeloblastic cells had increased to 93 per cent, showing that the basic process had not been interfered with, although clinically the patient was looking much better. On June 17 there was a sharp rise in temperature, though no localizing sign was present. It was considered probable that the effect of ACTH was running out. During the following days the respirations became increasingly rapid, and the outlook appeared hopeless unless some new type of treatment could be instituted. Accordingly, the patient was started again on full doses of chloromycetin, aqueous penicillin and streptomycin, with no apparent benefits. The dose of ACTH was therefore increased to 40 mg. every eight hours, a total of 120 mg. daily. Prior to this increase in dosage, the patient had been maintained on 40 mg. per day for two weeks, and it was apparently this lower dosage that had caused the trouble. The patient again showed dramatic improvement with this increased dosage of ACTH and was discharged from the hospital on June

30, with instructions to continue the full dose of ACTH at home and gradually diminish it as her condition permitted. On general physical examination there was no evidence of any abnormal bleeding tendency, although there were small ecchymotic areas over the soft palate and the palatine arches. There were coarse rales and ronchi at both lung bases, more marked on the right. There was no cervical adenopathic change, and the spleen could not be palpated with certainty.

After her discharge from the hospital the patient did surprisingly well at home for the first three weeks, although after the first week the dose of ACTH had been decreased to 20 mg. twice a day. In the last week of July, as the erythrocyte count had dropped to 3,500,000 per cubic millimeter, the patient was again given two transfusions of 500 c.c. each. This resulted in a temporary improvement. The pa-

tient did not, however, regain her former condition as of early July. She slowly became weaker, and the temperature began to rise. By the second week of August the patient was bedridden, with daily temperature swings in spite of an increase in the dosage of ACTH. Her condition deteriorated gradually, and on August 23, 1951, she died.

SUMMARY

An interesting and previously unreported manifestation of acute myelogenous leukemia, simulating acute appendicitis by pain in the right lower quadrant of the abdomen, is presented. The temporary improvement that occurred as a result of ACTH therapy was striking. It was hoped that the condition itself might change to a chronic form of leukemia, but this did not take place.

THE CONSERVATIVE INTEGRATION OF ACTH IN THE AMBULATORY ALLERGIC PATIENT

A. L. MAIETTA, M. D.*

The enthusiastic reception accorded the introduction of ACTH in the field of allergy has been tempered gradually by critical clinical evaluation.¹ Extensive clinical observations have crystallized its therapeutic administration in the following manner:—(a) ACTH may be used to advantage as an adjunct in the temporary alleviation of the more severe symptoms associated with hypersensitivity;² (b) improvement frequently may be maintained for but a short period;³ (c) there is some evidence that in relapse the symptoms of some types of hypersensitivity may recur with greater severity than before (rebound phenomenon);⁴ (d) although short term therapy may be life-saving, long term therapy is not warranted because of the possible untoward effects and the expense;⁵ (e) short term therapy (2 weeks or less) can be carried out safely under a proper regimen without extensive studies, long term therapy demands laboratory supervision.⁶

The purpose of this report is to present a selected group of 24 ambulatory, allergic patients who have received ACTHAR Gel as an adjuvant therapeutic measure conservatively integrated in their antiallergic regimen. Nine patients had chronic bronchial asthma, 9 acute seasonal hay fever, 4 chronic generalized eczema and 2 chronic angioneurotic edema and urticaria. The recommended contraindications to ACTHAR Gel were observed.

* Chief of the Allergy Clinic, Carney Hospital, Boston, Massachusetts.

BRONCHIAL ASTHMA

In this group, the symptoms of chronic bronchial asthma had been present from 2 to 50 years. These patients were never asymptomatic despite adequate and suitable palliative medication (adrenalin, isuprel, ephedrine, aminophyllin and potassium iodide), specific therapy (dust and mold desensitization or elimination of offending allergens), and non-specific measures (respiratory vaccines). Some degree of respiratory distress, sharply curtailing physical activity, was always present; exacerbations were frequent and incapacitating; while hospitalization was occasionally required for severe, prolonged attacks (status asthmaticus). Loss of work, prolonged treatment, expensive medication and fear that any severe attack may prove fatal are prone to produce an anxiety state which tends to aggravate the basic symptomatology.

Twenty to 40 Armour Units of ACTHAR Gel were administered intramuscularly once or twice a week in addition to the other antiallergic medications. The dose and frequency were influenced arbitrarily by the severity of the chronic asthmatic symptoms. One to 9 doses were required to produce a satisfactory result. Prior to the addition of ACTHAR Gel to the therapeutic regimen, the results were unsatisfactory despite adequate therapy. As soon as ACTHAR Gel in small and infrequent doses was conservatively integrated into the treatment, a much

better response to ephedrine, aminophyllin and potassium iodide was noted. When the asthmatic symptoms were well controlled, the weekly or semi-weekly doses of ACTHAR Gel were discontinued. The patients remained asymptomatic as long as the usual suitable medications were continued. ACTHAR Gel, administered as described, seemed to help these patients over a "critical clinical hump" which heretofore they were unable to overcome and, in addition, made them more responsive to the usual antiallergic medication.

SEASONAL HAY FEVER

Nine ragweed sensitive patients, previously untreated, presented themselves for treatment with severe hay fever symptoms at the height of the ragweed season. The initial treatment consisted of a small coseasonal ragweed pollen desensitizing injection and the administration of an antihistaminic agent (Chlor-Trimeton, Phenergan or Thephorin) to be taken orally as instructed. This proved entirely inadequate. However, with the integration to the treatment of 20 to 40 Armour Units of ACTHAR Gel, the severe hay fever symptoms were controlled quickly. One to 2 injections of ACTHAR Gel intramuscularly were required to bring about this satisfactory state. After its discontinuance, the patients progressed normally with specific coseasonal pollen desensitizing therapy and palliative antihistaminics. Again, a small dose or two of ACTHAR Gel seemed to help these patients over a "critical clinical hump" following which they responded remarkably well to orthodox therapy.

ALLERGIC DERMATOSES

Four patients with chronic generalized eczema and 2 with chronic angioneurotic edema and urticaria failed to respond sufficiently to elimination diets, palliatives (antihistaminics, ephedrine, ointments) and, when required, colloidal baths (Aveeno, soda bicarbonate or cornstarch) or compresses of modified Burrow's solution. The symptoms, fluctuating from mild to severe, had persisted from 6 months to 2 years. The addition to the treatment of 20 to 40 Armour Units of ACTHAR Gel intramuscularly

brought about a dramatic amelioration. Three to 7 injections of the hormone given weekly were required to improve the symptoms; thereafter the usual medications sufficed. Here again, ACTHAR Gel seemed to help these patients overcome the "critical clinical hump" of their illness.

SUMMARY AND CONCLUSIONS

Twenty-four selected patients with chronic manifestations of allergy failed to respond to the usual antiallergic therapy. However, when ACTH in small, infrequent doses was integrated in the therapeutic regimen, the clinical response was highly satisfactory. Following its discontinuance, allergic symptoms responded more readily to usual measures.

The administration of ACTH was not intended to replace recognized elimination or desensitizing procedures; rather its conservative integration in the management of the chronic allergic patient proved to be a valuable adjuvant to time-tested measures.

The "rebound phenomenon" was not noted after the administration of the hormone was discontinued.

ACTH was employed as an adjuvant in severe cases only, after other therapy had failed.

The conservative integration of ACTH in the management of the chronic allergic patient constantly produced satisfactory results.

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101st Annual Session

The Samoset, Rockland, Maine — June 13, 14, 15, 1954

A Progress Report of plans for this meeting will be published in the May issue of the Journal

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The Journal of the Maine Medical Association

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All For The Patient

One of the guest speakers at our Centennial Celebration was Doctor Dana W. Atchley, son of a minister who served well a parish in Bath, Maine. Dr. Atchley presented a paper titled Psychosomatic Aspects of Medicine. It was, in our opinion, a bright and shining example of the best type of medical essay. The concluding story of the patient with the eruption, missing in the published version which appeared in our JOURNAL in November, 1953, indicated the speaker's lively sense of humor and warm understanding of human nature. We have reread the essay with increasing delight and enlightenment. Imagine, therefore, our spirited interest in finding an article by Dr. Atchley called The Healer and The Scientist, in the issue of the *Saturday Review* for January 9, 1954. We recommend it to our members as a choice bit of outside reading. They will find therein, we believe, a good tempered review of the roles played at this time by the Healer and the Scientist.

In an easy yet concise style of writing Professor Atchley, for he is Professor of Clinical Medicine at Columbia University School of Medicine, develops the gradual merging of the art of healing and the

science of medical investigation. It is good to see the merger developed by such a wise and tolerant pen. The busy days of present medical practice appear at times to emphasize, perhaps too heavily, the "work up," speedy analysis and quick "turn over." Certainly, praiseworthy results are achieved by tests in the laboratory, examinations by X-ray, electrocardiograms and electroencephalograms. And the physical complaints of patients are understood and relieved by the intelligent evaluation of the results of scientific tests. At times, however, the individual suffers not only from aches and pains in his body but suffers, also, from a depression of mind and heavy load on the heart. Not infrequently, the wounded mind and soul are relieved by the art of the healer with a gift for giving sympathy and expressing compassion. The patient under the care of a physician who recognizes the values existing in the art of healing and in the science of investigation is fortunate and is usually helped in both body and soul.

A quotation from Dr. Atchley's article expresses it as follows: "It is thus apparent that the physician of today, at his best, represents a fusion of the healer and the scientist."

Voluntary Cooperative Effort

We are pleased to report that the Penobscot County Medical Society and the Cumberland County Medical Society have, at their last regular meetings, voted to approve the Polio Vaccine Field Trials.

Early in March Dr. Dean Fisher, the acting commissioner of Health and Welfare, received information to the effect that the above mentioned areas had been approved by the National Foundation for In-

fantile Paralysis for the proposed vaccine field trials. Upon receipt of this information Dr. Fisher conferred with the public health officers in the two counties and with the Presidents of the County Medical Societies. The Presidents of the two county medical societies appointed without delay special committees to study the proposed trials.

The committees had their meetings locally and attended a meeting in Augusta on March 24th to hear Dr. Wagner, the Medical Regional Consultant of the National Foundation. At this meeting Dr. Wagner explained in detail the plan for the trials. He answered questions which were asked by physicians, health officers, school superintendents and municipal officers. This meeting clarified many details. Dr. Wagner made it clear that the whole enterprise was a voluntary one and a coöperative one. The Foundation would furnish manuals and materials. The local organizations would furnish volunteers, and the Health Department would contribute personnel and equipment from its resources.

Following the Augusta meeting the Committees reported to their respective County Societies and in their reports recommended approval of the Polio Vaccine Field Trials. The Committee reports were accepted and the recommendation to participate was approved.

Now, therefore, the medical profession, the school organizations, parent-teachers associations, and public health agencies will be requested to combine their efforts to participate in the trial.

It seems to us that this voluntary coöperation of interested groups promises to establish some real information which will be of value to everyone.

Some Proposed Federal Legislation

I attended a Regional Conference held by the American Medical Association, Committee on Legislation in New York on Saturday, February 13, 1954. Dr. Clyde I. Swett of Island Falls, Chairman of our state Committee on Legislation, also attended. Dr. David B. Allman of New York, Chairman of the American Medical Association Committee, presided and representatives of the Washington Office of the American Medical Association were present to give information and advice.

A notable feature of this conference was the free and frequently contentious discussion from the floor, in many cases opposing the stated position of the American Medical Association. Certainly a democratic approach.

On the question of the extension of Social Security to self-employed persons including doctors a real discussion developed. American Medical Association's opposition to this measure is, first, that it is socialistic and secondly, that it would provide a very limited protection in the case of doctors whose working incomes and ordinary living expenses are well beyond anything that O.A.S.I. under Social Security would supply.

Polls in some states however have shown that many individual doctors desire this coverage.

This phase of Social Security is essentially a welfare proposition and not a pension based actuarially on any system of payments that would produce that pension. The government has in mind a system of grants from Social Security at age sixty-five or at seventy-five which have been at least partially paid for in advance and thus eliminating finally Old Age Assistance, which is a State-Federal dole or gift.

This alleged pension system will at age 65 produce a maximum amount of \$85 per month for the person covered, and an additional \$40 per month for a dependent spouse. Since few doctors retire at age 65, and since only \$900 per year can be earned by the

person receiving the pension, this system is somewhat unrealistic.

However the divergence of opinion between the American Medical Association and individual doctors turned out to be chiefly a misunderstanding, American Medical Association's opposition being to *compulsory* coverage of doctors.

It has been proposed that the individual doctors be allowed to set up their own annuity system with private insurance carriers, and be allowed income tax exemption on the amounts paid for its purchase. In order to be entitled to this exemption the plan of self-pensioning would have to conform to certain specifications set up by the government and there would be a limit on the amount that could be exempted each year. The annuity or pension when received would of course be taxable then. The Jenkins-Reed-Keough bill attempts to implement this proposal and was heartily endorsed.

The Bricker Amendment was thoroughly discussed. As you know this matter failed to receive the necessary two-thirds vote in the Senate, losing out at the time by one vote, 60-31. The George Amendment was the one voted on but its principles were acceptable to the American Medical Association. A motion for reconsideration is pending and when the matter is to be voted on again it is hoped that the additional vote or votes may be obtained. The two Senators from Maine were co-sponsors of the Bricker Amendment and of course voted in favor of it and also the George Amendment.

The position of the American Medical Association opposing Veterans' Care for non-service connected disabilities or illnesses was heartily supported. Of course exceptions are made because of lack of local facilities at present specifically in neuropsychiatric and tuberculous cases.

W. MAYO PAYSON,
Executive Secretary.



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COUNTY SOCIETY NOTES

Androscoggin

Rudolph Toch, M. D., from the Childrens Medical Center in Boston, presented a very interesting paper entitled Advances in Tumor Chemotherapy, at a meeting of the Androscoggin County Medical Society on Thursday, March 18th, at the Central Maine General Hospital in Lewiston. Dr. Toch's paper, which was illustrated with slides, was followed by an equally interesting question and answer period.

PAULINE G. STARKS, M. D.,
Secretary.

Hancock

A regular meeting of the Hancock County Medical Society was held at Ellsworth, March 10, 1954. There were eighteen members and three guests present.

The meeting was opened by the president, Dr. Mason Trowbridge. Elizabeth B. Connell, M. D., and John T. Connell, M. D., both of Blue Hill, were elected to membership.

A letter from the Executive Secretary of the State Association, asking that we have an M. D. ready to accept the position of medical examiner if a vacancy occurs was read and discussed. A motion was passed that in the event of a vacancy in the office of medical examiner the county secretary should contact a member of the society willing to accept the position and should then notify the Executive Secretary of M. M. A.

The society was notified of a letter from the Executive Secretary of M. M. A., asking us to instruct our delegate concerning the action to be taken by the M. M. A. and the A. M. A. in regard to the report of the A. M. A. Committee for the Study of Relations between Osteopathy and Medicine. A motion was passed that this society is opposed to any relations with osteopaths.

Edwin Murphy, M. D., of Bar Harbor, gave an interesting talk on Current Concepts of Cervical Cancer illustrated with slides of pathological specimens. A discussion period followed.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Penobscot

James H. Means, M. D., Jackson Professor of Clinical Medicine at Harvard Medical School, was the guest speaker at a meeting of the Penobscot County Medical Society, which was held in the Bangor House, Bangor, on Tuesday, March 16. Dr. Means' subject was The New Look of Medicine.

HERBERT C. SCRIBNER, M. D.,
Secretary.

York

A regular meeting of the York County Medical Society was held at the Wonderbar Restaurant in Biddeford, March 10. There were twenty-two members and two guests present. A fine steak dinner was served after a very enjoyable social hour.

Elliott P. Joslin, M. D., and Leo P. Krall, M. D., both of Boston, presented an interesting and instructive paper entitled Diabetes Today. We were very fortunate to have a speaker with the great reputation that Dr. Joslin has.

The following resolution was passed: It is hereby moved that we instruct our delegates to vote against any cooperation with Osteopaths.

CHARLES W. KINGHORN, M. D.,
Secretary.

New Members

Cumberland

Francis X. Mack, M. D., Portland, Maine.

Hancock

Elizabeth B. Connell, M. D., Blue Hill, Maine.

John T. Connell, M. D., Blue Hill, Maine.

Deceased

Aroostook

Frederick L. Gregory, M. D., Caribou, December, 1953.

Wiley E. Sincock, M. D., Caribou, January 12, 1954.

Cumberland

Walter E. Tobie, M. D., Portland, March 21, 1954.

Kennebec

John O. Piper, M. D., Waterville, March 22, 1954.

Lincoln-Sagadahoc

Philip H. Sylvester, M. D., Damariscotta, March 12, 1954.

NOTICES

PEDIATRIC CLINICS

**Bangor* — Eastern Maine General Hospital, 1.30 p. m.: Jan. 29, Feb. 26, Mar. 26, Apr. 23, May 28, June 25.

**Waterville* — Thayer Hospital, 1.30 p. m.: Jan. 5, Feb. 2, Mar. 2, Apr. 6, May 4, June 1.

**Presque Isle* — Northern Maine Sanatorium, 1.30 p. m.: Jan. 27, Mar. 24, May 26.

*Several of the Pediatric Clinics, and also Bangor CC Clinics, will be two-session clinics.

By Appointment Only

Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Mansfield Clinic, Thayer Hospital. 3rd Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Caribou, Houlton, Lincoln, Machias, Rockland and Rumford. The Portland Clinic is open daily with a staff of 1 psychiatric social worker and 1 psychologist. The psychiatrist is in attendance on Tuesdays. The other clinics are staffed by a psychiatrist and a psychologist.

Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.

Department of Health and Welfare

Division of Maternal and Child Health

(Including Services for Crippled Children)

Clinic Schedule — January Through June, 1954

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: Jan. 11, Feb. 8, Mar. 8, Apr. 12, May 10, June 14.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: Jan. 15, Feb. 19, Mar. 19, Apr. 16, May 21, June 18.

Rumford — Community Hospital, 1.30-3.00 p. m.: Mar. 17, June 16.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Feb. 25, June 24.

Rockland — Knox County Hospital, 1.30-3.00 p. m.: Feb. 18, May 20.

Machias — Normal School, 1.30-3.00 p. m.: Feb. 10, Apr. 14.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.: 1.00-3.00 p. m.: Jan. 12, Mar. 10, May 11.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: Mar. 9.

Fort Kent — Peoples Benevolent Hospital, 10.00 a. m.-1.00 p. m.: Jan. 13, May 12.

**Bangor* — Eastern Maine General Hospital, 1.30-3.00 p. m.: Jan. 28, Mar. 25, May 27.

Augusta — Augusta General Hospital, 1.00-3.00 p. m.: Apr. 22.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: Jan. 29, Feb. 26, Mar. 26, Apr. 23, May 28, June 25.

CLEFT PALATE EVALUATION CLINICS

Portland — City Dispensary, India Street, 10.00 a. m.: Feb. 9, May 11.

Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.

Augusta General Hospital, Augusta, Maine, 1st Monday, 9.00 A. M., Leon D. Herring, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Ross W. Green, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

Venereal Disease Clinics

The Department of Health and Welfare, Bureau of Health, maintains facilities for the diagnosis and treatment of venereal diseases in the following locations:

Augusta, Bangor, Bath, Belfast, Biddeford, Lewiston, Portland, Rockland, Rumford, Sanford, Waterville, Wilton and Winthrop.

Any physician wishing to refer an indigent person for diagnosis or treatment may obtain the name of the nearest clinic physician by contacting the Department of Health and Welfare, Bureau of Health, State House, Augusta, Maine. If no clinic facilities are available, physicians will be authorized to treat indigent patients in their offices. Authorization should be requested before treatment is started.

BOOK REVIEW

Science and Man's Behavior, by Trigant Burrow, M. D., Ph. D., 1953, The Philosophical Library, Inc., 15 East 40th Street, New York 16, N. Y.

"Science and Man's Behavior," by Dr. Trigant Burrow, consists of the complete text of his last book "The Neurosis of Man," prefaced by what he considered the most vital aspects of a correspondence with leaders in various scientific fields concerning parts of this book. The author felt that a greater understanding of his original thesis might be achieved by incorporating the two in book form and hoped that it would provide new insight into the basic problem of man's behavior.

Dr. Burrow feels that to date scientists have all based their concepts of man's behavior on preconceived notions which bear no relation to scientific fact, and his purpose is to provide a more fundamentally biological standard for judging the healthy personality. Accordingly, he discredits all previous research in the realms of psychiatry, psychology, and sociology, and presents a new concept of neurosis complete with unique terminology. He seems to be another "lone wolf" of which there are already too many among the social scientists (such as Freud, Meyer, and Rado in psychiatry). Like these, too, he has gathered a circle of followers around him at his laboratory, The Lifwynn Foundation, who worship his school of thought to the exclusion of all others.

The book is difficult to comprehend, partly because of its unfamiliar vocabulary (though there is a glossary), but largely because the interpretation of its language taxes one's intellectual powers to the utmost. However, some of the basic principles seem to be of merit.

Dr. Burrow develops the idea that there are three parts to the human nervous system. The first portion is the Autonomic Nervous System; the second and third are parts of what is usually referred to as the Central Nervous System. He divides this System into two parts, one dealing with sensory and effector responses, and the other with language and its neural mechanisms. According to the author, it is this third section, the so-called part-brain, which is responsible for speech, fantasy, and symbolism. He feels that this ability to symbolize (knowledge) causes a universal neurosis.

To explain the formation of this neurosis further, the words and symbols man uses make up the rules by which he lives. These rules are passed down from parent to child. The

child, who needs to feel accepted, automatically chooses the parentally accepted or right pattern to achieve his ends and rejects the wrong. This right-wrong attitude governs his entire life. Unfortunately, each family has different rules. People tend to be friendly with those whose standards are similar, and hostile to those whose beliefs are different. This disharmony in human relationships is responsible for family and religious discord, crime, and even war.

Dr. Burrow calls this type of social or symbolic thinking partitive, because it is produced by the part-brain. He then gets a little lost in his own symbolism and says that this thinking is only partial in character. He calls the state that this type of thinking produces ditention. To make this clear, perhaps his definition of ditention would help: "Term used to indicate the intrusion of affect-elements or bias in ordinary attention. Ditention is a reaction that characterizes man's interrelational behavior throughout. (Contrasted with cotention.)"

He proposes to cure ditention by teaching people to produce a state of cotention within themselves. This state is supposed to be the true biological response of the organism to the environment. This state can be attained by the following rules: (1) relax; (2) close one's eyes; (3) focus the eyes on an object close to and in front of them; (4) concentrate on this object; (5) stop all eye movements; and (6) arrest all mental images. According to the author, cotention produces physiological changes in the body (i.e., slowing and deepening of respiration, as well as changes in the BMR and EEG). Relative to this, Dr. David Katz, Swedish psychologist, questions the author's claim that the respiration can be decreased to a rate of four per minute on the basis that this rate would not support human life.

This state sounds very much like the Buddhist state of nirvana. Many feel that the Ahoit, or monk, who seeks nirvana, may sometimes be hiding schizophrenia under a cloak of religion.

It is very difficult to see just how this state of cotention could cure the widespread neurosis of ditention described by the author.

In summary, perhaps it could be said that "Science and Man's Behavior" is one of the best possible examples of partitive thinking and ditention.

NICHOLAS FISH, M. D.,
Portland, Maine.

MAINE CHAPTER
AMERICAN COLLEGE OF SURGEONS

Meeting

Saturday, June 12, 1954

Samoset Hotel, Rockland, Maine

PROGRAM

Surgery of the hand, head injuries, carcinoma of the cervix, hypersplenism.

Dinner meeting with guest speaker, Dr. Edward Churchill, Professor of Surgery, Harvard.

All members of the Maine Medical Association are cordially invited.

EMERSON H. DRAKE, M. D.,

Portland, Maine,

Chairman,

Program Committee.

TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

The Role of Antibiotic Drugs in the Treatment of Tuberculosis

By Frederick Beck, M. D., New York State Journal of Medicine, October 15, 1953.

In the past five years the treatment of tuberculosis has changed as a result of the rapid development and application of antimicrobial therapy and thoracic surgery. Concomitantly, one would suspect that the treatment of tuberculosis should become simple, but actually it is more complex because many more patients are suitable for surgery which requires (1) selection of drugs, (2) determination of the type and timing of surgery, and (3) consideration of duration of postoperative drug therapy.

The development of tuberculosis antimicrobial therapy has been rapid beginning in 1947 with the introduction of streptomycin which was soon followed by para-aminosalicylic acid, the thiosemicarbazones, and in late 1951 by the nicotinic acid derivatives. These drugs in various combinations have become very popular. In reviewing the patients with active disease at Ray Brook State Tuberculosis Hospital (N. Y.) these drugs are currently being used on 50 to 60 per cent of the patients, and practically all the remainder have been treated with drugs at some time. There is an increasing trend toward immediate chemotherapy or antibiotic therapy of tuberculosis patients upon diagnosis and, in fact, even upon mere suspicion of the disease.

The treatment of nontuberculous disease as tuberculosis is not rare, and the importance of the bacteriologic diagnosis before initiating such treatment should be stressed. There are occasional instances where after prolonged study for several weeks bacteriologic proof is lacking. However, in these cases the possibility of non-tuberculous infectious disease such as broncho-pneumonia, virus pneumonitis, or fungous disease should be carefully evaluated. It is important to secure information concerning the *in vitro* sensitivity of the patient's organisms at the start of treatment. By this is meant a determination of the effect of varying concentrations of streptomycin, para-aminosalicylic acid, and isoniazid on the bacilli to establish whether there is a drug effect and at what level. Knowledge of the sensitivity enables one to favor those drugs demonstrated to be effective by the *in vitro* tests.

Today drugs are used in combination. It was found quite early that when streptomycin was used alone, resistant organisms might be recovered several weeks after start of treatment and were in the majority after 60 days. The addition of PAS delayed and reduced the incidence of resistance.

At present the best combination, from a therapeutic, bacteriologic, and radiologic standpoint is streptomycin and PAS. In 1951 and 1952 a comparative study of streptomycin and dihydrostreptomycin in the New York State tuberculosis hospitals showed that there was no difference in therapeutic efficacy at 120 days of treatment and no significant difference in emergence of drug resistance. Vestibular disturbances are more frequent, of greater severity, and often occur earlier when streptomycin is used while auditory disturbances are more frequent with dihydrostreptomycin and may progress after treatment is stopped or may appear after conclusion of treatment.

With regard to dosage, a group of patients in the Ray Brook Hospital recently studied has been alternated between 1 gm. daily of streptomycin and 1 gm. of streptomycin three times a week. In addition to the streptomycin, they received

12 gm. of PAS daily. At an evaluation after 120 days we were unable to recognize any significant difference between the two groups from a clinical, therapeutic, X-ray, or bacteriologic standpoint and have tentatively reached the point where we believe that 1 gm. of streptomycin given three-times-a-week is as effective as the same amount daily and is more convenient and potentially less toxic for longer periods of treatment.

Isoniazid has been used by us since early 1952. The original studies were done in cooperation with several other sanatoria in the Saranac Lake area. The first cases treated were, for the most part, far advanced with organisms resistant to streptomycin, and iso- and iproniazid were used in alternate cases. Practically all of these cases developed resistance to the drug rapidly, and it was decided to test the drug in combination with streptomycin or PAS. The clinical progress of patients on both of these combinations is quite satisfactory. Data which will indicate whether isoniazid is as effective as PAS in postponing streptomycin resistance are now being sought. If it is, isoniazid would seem to be a more satisfactory drug to use in combination with streptomycin than PAS, which often causes allergic manifestations. On the other hand, in view of the fact that there are more strains of tubercle bacilli naturally resistant to INH, this combination may not be as effective in regard to the development of INH resistance.

When one considers optimum duration of therapy, we must take into account our concepts of the treatment of the disease and our objectives. The past decade has been marked by a better understanding of the potential hazard of residual disease foci and by the demonstration of the practicability of surgical removal of lobes, segments, or smaller areas of diseased lung tissue.

Some patients are not suitable candidates for surgery because of such factors as extent and distribution of disease, age, or general condition. The trend in this group has been toward longer courses of antibiotics.

In the bacteriologic study of resected lung specimens, it has been repeatedly demonstrated that acid-fast bacilli can be found microscopically in many specimens, but cannot be grown by culture, nor will they produce disease in guinea pigs. The same situation can occur in old, encapsulated or arrested lesions. It would be desirable to determine whether it is truly possible to kill all the tubercle bacilli in the host with longer terms of therapy or whether these bacilli are only in a dormant phase.

Hospital care is necessary at some period for every patient with active tuberculosis. The problem is much broader than that of medical treatment alone. If the patient has a positive sputum, he is a source of infection to others, and he should be in a hospital. Home care is an important adjuvant to hospital care but must be organized with an adequate staff and carefully coordinated in order to achieve the maximum medical and rehabilitation benefits. In answer to the common belief that patients will be more content at home, I shall only say that I am convinced that patients can become content in a tuberculosis hospital if the hospital standards are high and if proper attention is given to the interpersonal relationships of the hospital personnel and the patients.

(The printing of Tuberculosis Abstracts is made possible by the cooperation of your local tuberculosis and health association.)

* From Vol. XXVII, April, 1954, No. 4.

obesity?



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THE MAINE CANCER SOCIETY

ANNOUNCES

A SYMPOSIUM ON CANCER THERAPY

Tuesday, May 4, 1954

2:30 P. M. - 9:00 P. M.

Dow Air Force Base, Bangor, Maine

The scientific portion of the program will include:

SURGICAL TREATMENT OF CANCER OF THE BREAST

JEROME A. URBAN, M. D.

Memorial Center for Cancer and Allied Diseases

and

HORMONAL THERAPY IN BREAST CANCER

IRA T. NATHANSON, M. D.

Massachusetts General Hospital

Round-Table discussions are planned from 5:00-7:00 P. M.

Dinner will be served at the base at reasonable rates.

Complete program announcements and applications for reservations for this symposium will be mailed to all members of the Maine Medical Association.



The Journal of the Maine Medical Association

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No. 5

THE ANTERIOR FONTANEL AND ITS RELATION TO PHYSICAL AND MENTAL DEVELOPMENT*

ELLA LANGER, M. D., Augusta, Maine

The present study was undertaken to determine whether the size of the anterior fontanel would be a satisfactory index to use for appraising skeletal age, growth and development. Although this investigation did not show correlation between these items, the facts obtained seemed worthy of recording.

Specifically the study investigated: I. The time of closure of the anterior fontanel in correlation to a) skeletal age, b) dentition, c) nutrition, d) mental development, e) possible hereditary factors. II. Furthermore, correlation of the size of the anterior fontanel at birth to a) the time of closure, b) skeletal age, c) body weight and body length, d) mental development, was investigated.

Method of Investigation

The group under consideration consisted of about 150 white children. These children have been examined at regular intervals since birth by pediatricians, psychologists, and other professional workers. Anthropometric measurements, physical examinations, roentgenograms and mental tests in this longitudinal study have made it possible to expand the investigation in a number of different directions. The group consisted of normal children. No mental defectives were included. Ten cases of slight rickets in the group made an investigation of correlation of

postnatal involution of the anterior fontanel and rickets impossible at this time. The group was chosen at random. The margins of the anterior fontanel were palpated and estimates of the diameters recorded. Such examinations were made at 1, 3, 6, 9 and 12 months of age and every six months thereafter.

Time of closure was recorded as having occurred at one or another of the above age levels. In an effort to reach a more exact time of closure, estimations of time of closure were also made by interpolation between the age intervals. This estimated time of closure correlated with the time recorded at the examinations at $\pm .94$. Therefore, the use of the recorded time of closure for the calculations seemed justified.

I. THE TIME OF CLOSURE OF THE ANTERIOR FONTANEL

In a group of 117 children, the mean time of closure was found to be 17.9 months. The mean time of closure for boys (58) was 17.9 months and for girls (59) 17.8 months. The difference between the means, as indicated by the critical ratio was not statistically significant and for most of the operations it was possible to combine the data. However, when using the skeletal age and the skeletal quotient, the sex was taken into account, the Fels Norm¹⁰ being different for boys and girls.

* This study was done several years ago. It is published now by request.

There are many statements in the pediatric literature concerning the time of closure of the anterior fontanel. In most of the texts the time of closure is given as 18 months or later. Gray¹ mentions 18 months, Parsons² and Chapin³ the same; Robertson⁴ states: "An open fontanel in a normal, non-rachitic child at the end of the second year is very unusual." Griffith⁵ gives the time of closure as 18 months; Holt⁶ gives a range of from 9 to 16 months.

The distribution of the time of closure in the various age groups was as follows:

Time of Closure in 117 Children

Age Group	No.	Per Cent
Closure between birth and twelve months	30	26
Closure between 12 and 24 months	79	67
Closure after 24 months	8	7
	117	100

In the 30 children with early time of closure—birth to 12 months—12 children (10% of the entire series) had a time of closure prior to the age of 9 months, while in 18 children (16%) the anterior fontanel closed between 9 and 12 months. In contrast to this, Scammon⁷ reports 1% of his series as having a time of closure between the ages of 6 and 9 months, and 4.5% between 9 and 12 months. Scammon explains his low figures by the fact that his subjects were European indigent children. He expects earlier closure for the better nourished and more rapidly growing American children.

Mendilaharzu⁸ observed 8.12% closure before 12 months in his group of 1654 infants while Garrahan⁹ noted 10% closure before 12 months in a group of 440 children.

a) Time of Closure and Skeletal Age.

Roentgenograms of the upper and lower left extremities were taken at 1, 3, 6, 9, 12 months and every six months thereafter; they made it possible to study the relation between time of closure and skeletal age.

Fels norms were used for assessing the skeletal age. These were based on a study of Sontag, Snell and Anderson¹⁰ in which skeletal development was measured by the time of appearance of the ossification centers in the upper and lower left extremities.

Two methods of approach were used on the problem.

1. Mean skeletal quotient.

Twenty-four children with the earliest time of closure were chosen from the whole group and the means for the skeletal quotient calculated. The skeletal quotient is the number of ossification centers at a certain age in one child, divided by the number of ossification centers indicated by the Fels Norm for that age. The means for the skeletal quotient at 12

months, and the means for the skeletal age at 24 months, were calculated.

The Pearson coefficient of correlation (r) was obtained for the time of closure and skeletal quotient of 117 children in the group. The correlation obtained was not statistically significant.

2. Closure correlated with skeletal age and chronological age.

The group with early closure had a mean skeletal age of 28 months at the chronological age of 24 months, whereas the late group had a skeletal age of 24.3 months at the same chronological age. The critical ratio indicated a significant difference between the means (2.6). In this group there was evidently a tendency for fast closure in children with advanced skeletal age.

b) Time of Closure and Dentition.

Ryhiner¹¹ stated that he found late time of closure of the anterior fontanel in children with late dentition.

In the two above groups of children, 24 with early closure and 24 with late closure, the mean time for the eruption of the first deciduous tooth was 7.9 months and 8.5 months, respectively. The critical ratio showed the difference was not statistically significant (.44).

In addition, the time of onset of the calcification of the first molar was determined. This information was obtained by evaluating the lateral jaw X-ray films. The correlation between the time of closure of the anterior fontanel and the onset of calcification of the first molar was not significant, as shown by Fisher's t test.¹²

c) Time of Closure and Nutrition.

Mourignaud, Bernheim and Lacaux¹³ found earlier closure of the anterior fontanel in breast fed children, whereas Mendilaharzu and Ugarte⁸ found no difference in time of closure between breast fed and artificially fed infants.

Our investigations of these two factors follow.

1. Time of closure and breast feeding.

Twenty-eight breast fed infants were compared with 28 bottle fed infants. The breast fed group had been nursed for 6 months at least. The mean time for nursing was 8.1 months. The time of closure for this group was 16.3 months, whereas the time of closure for the artificially fed children was 16.4 months. The difference between the time of closure for the two groups was not statistically significant.

2. Time of closure and diet of the mothers during pregnancy.

Twenty-six children of mothers having an average daily vitamin D supplement of 400 units or more during pregnancy were compared with 26 children

of mothers having no such vitamin D supplement during pregnancy. The results were as follows :

Type of Diet of Mother	Time of Closure of Anterior Fontanel of Child Months
Vitamin D supplement	17.2
No vitamin D supplement	17.6

The times of closure for these two groups were not significantly different. This is in contrast to Holt's⁶ statements: "There can be no doubt that the practice of giving diets rich in calcium and supplements of vitamin D in pregnancy increases ossification in utero. The infant is born with a greater store of calcium in his bones and closure of the fontanels and sutures occurs earlier."

d) Closure Time and Mental Development.

For assessing the mental age of the children, the Fels Norm¹⁴ of Gesell's developmental items were used through 24 months, standardized norms of the Stanford-Binet tests thereafter.

Many of the statements in the pediatric literature say that "premature" closure of the anterior fontanel is connected with microcephalia and is the cause of mental retardation. Holt⁶ says that premature closure of the fontanel is most frequently seen in cases of arrested cerebral development, notably microcephalus. He has seen the anterior fontanel closed to palpation at 7 months of age in a child whose mental development was normal. Parsons² states, with reference to mental deficiency, that the size of the head and early closure of the fontanels are important factors in arriving at a diagnosis. Garrahan,⁹ on the other hand, concludes that early closure of the fontanels is not exclusively connected with microcephalia. He suggests modifying the established idea of the importance of microcephalia for premature occlusion.

Ten cases with "premature" time of closure between 6 and 9 months were compared with 10 children with latest time of closure—24 months and later. The mean mental age of the early closure group was 56.9 months at the chronological age of 48 months, whereas the mean mental age for the second group was 57.8 months. The critical ratio of .28 showed the difference to be not significant.

An investigation was also made of the relation of the size of head to time of closure. The mean head circumference at 6 months for the group of 117 children was found to be 42.8 cm. The mean head circumference for the 10 children with early closure was 42.5 cm., for the late group 43.1 cm. The difference was not statistically significant.

e) Possible Hereditary Factors in Time of Closure.

The many siblings in the group made it possible to

investigate the genetic factor. There were 24 families with more than one child. The sibling distribution was as follows :

17 families with 2 siblings	34 children
6 families with 3 siblings	18 children
1 family with 4 siblings	4 children
24 families with	56 children

The time of closure of the siblings was correlated in all possible combinations, within each family. The 41 pairs of siblings obtained showed a value of .23 by Guilford's¹⁵ interclass correlation formula. By regrouping the entire group, the same children could be taken for comparison as non-siblings. The correlation in the latter case was zero. The critical ratio of 1.4 was not statistically significant for a group of this size, but it is perhaps suggestive. In order to arrive at a more definite decision concerning the hereditary factor it would be necessary to investigate a larger series.

II. CORRELATION OF THE SIZE OF THE ANTERIOR FONTANEL AT BIRTH WITH THE TIME OF CLOSING, SKELETAL AGE, BODY WEIGHT AND LENGTH AND MENTAL DEVELOPMENT

a) Size of the Anterior Fontanel at Birth in Relation to Closure Time.

Erlich¹⁶ says that small fontanels close earlier than larger ones. This statement was verified in our small group. Two groups of children were chosen on the basis of the size of the fontanels at birth. These represented the 15 children of the series with the smallest fontanel at birth and the 12 children with the largest fontanels. The mean time of closure for the fontanels which were small at birth was 14.1 months, the time of closure for the large fontanels was 19.6 months. The difference between the means was statistically significant (critical ratio=3.9).

The correlation between the size of the anterior fontanel and the time of closure was .20, this being significant at the 5% level.

b) Size and Skeletal Age.

Twenty-six children with small fontanels at birth were compared with 26 children with large fontanels at birth on the basis of skeletal age and the skeletal quotient. The small-fontanel group, at six months, had a mean skeletal age of 6.2 months and the large-fontanel group had a mean skeletal age of 7.0. The difference between the means was not statistically significant although it approached significance (1.91).

c) Size of the Anterior Fontanel at Birth and Body Weight and Body Length.

Macchi¹⁷ found small fontanels associated with

large and heavy children. Erlich¹⁶ and Garrahan⁹ mention the same findings: small fontanels in large and heavy children more often than in underweight ones.

In the group of children, the correlation between the size of the anterior fontanel at birth and birth weight was not statistically significant. However, the size of the fontanels and birth length correlated at $+ .26$ which is significant at the 2% level. The decrement of the anterior fontanel from birth to 12 months showed no significant correlation to the increment of length from birth to 12 months.

There is thus in this series a significant positive correlation between the size of the anterior fontanel at birth and birth length; that is, children with large body length at birth tend to have large fontanels at birth.

d) Size and Mental Development.

Erlich¹⁶ states that children born with a small fontanel showed average mental development. We found the same in our group.

Size of fontanel at birth	No.	Mental age at 24 months	No.	Mental age at 48 months
Small	26	26.0	15	58.0
Large	25	28.2	17	60.9

Critical Ratio of difference of means is 2.4 at the mental age of 24 months and 1.1 at the age of 48 months.

Size of the fontanel at birth and head circumference at six months showed no significant relationship.

SUMMARY

A study was made to determine whether a correlation exists between the size of the anterior fontanel and the skeletal age. No correlation was found.

No correlation was found between the time of closure of the anterior fontanel and the skeletal age, dentition, nutrition, mental development, possible hereditary factors. In order to arrive at a more definite decision concerning the hereditary factor, it would be necessary to investigate a larger series.

The size of the anterior fontanel at birth was correlated with the time of closure, skeletal age, body weight and length, and mental development.

The size of the anterior fontanel at birth in relation to closure time showed statistically significant correlation (critical ratio = 3.9). The mean time of closure for the fontanels which were small at birth

was 14.1 months, the time of closure for the large fontanels was 19.6 months, i.e., small fontanels closed earlier than large ones.

Also, the size of the fontanel and birth length correlated at $+ .26$, (significant at the 2% level). In this series children with large body length at birth tended to have large fontanels at birth.

No statistically significant correlation was found between the size of the anterior fontanel at birth and skeletal age, body weight, mental development, head circumference at 6 months.

Further investigation in relation of the anterior fontanel to physical and mental development appears necessary.

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PRESUMED ACUTE HYPOFIBRINOGENEMIA ASSOCIATED WITH ABRUPTIO PLACENTAE

A Case Report

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In recent publications consideration has been given to the hemorrhagic state produced by reduction in the blood fibrinogen concentration below the level necessary for adequate clotting of blood. Considerable interest has thus been aroused in the *acquired* form of a deficiency state which previously, recognized only in its "familial" or congenital form, had been considered a medical curiosity.

The list of illnesses in which acquired hypofibrinogenemia has been identified as a complication is growing. Among non-obstetrical conditions it includes such diversified clinical states as severe burns, disseminated prostatic carcinoma, surgery (particularly of the lung) and severe parenchymal liver disease.¹ Among obstetrical conditions, at least three have been indicted: amniotic fluid embolism,² severe abruptio placentae,³ and long-standing fetal death in utero.⁴ The belief appears to be increasing that hypofibrinogenemia has been responsible for bleeding attributed in the past to other causes and that a high index of suspicion will result in its more frequent recognition.

We wish to report a case of severe abruptio placentae with presumed hypofibrinogenemia in which the diagnosis was strongly suspected before any excessive bleeding had appeared and in which we believe a cure was effected by the administration of fibrinogen intravenously.

CASE REPORT

Mrs. M. C., a 36-year-old para ii, gravida iii was admitted to the Maine General Hospital, March 24, 1954, at 7:45 P. M., in the 36th gestational week, complaining of severe abdominal pain. Pains had been mild and intermittent from 3:00 to 7:00 P. M., when she suddenly suffered severe constant pain and complained of weakness.

The patient's pregnancy to date had been entirely normal. Her prior pregnancies 14 and 10 years before were uneventful. Past and family histories were non-contributory. There was no history suggestive of prior bleeding tendency, liver disease or dietary deficiency.

Examination showed the uterus to be tender and in a state of constant, board-like contraction. Blood pressure was 140/90, the pulse rate 92. The fetal

heart could not be heard. A diagnosis was made of severe abruptio placentae with concealed hemorrhage.

While typing and cross-matching were carried out, 5 c.c. of venous blood were placed in a water bath at 37° C. When observed one-half hour later, this blood was found to be completely liquid with no evidence of clot formation.

The patient was given demerol and scopolamine for relief of pain and at 9:00 P. M. a sterile vaginal examination was made. The cervix was thick, firm and 1½ fingers dilated. The membranes were ruptured artificially.

Another sample of venous blood showed a soft, mushy clot in Lee-White tubes at 16 minutes. This clot completely liquified after 3 to 5 minutes in the water bath. Additional blood studies showed a hemoglobin of 10.7 gm. and a platelet count of 48,000. The prothrombin concentration (one-stage) was 0. Unfortunately blood for a later fibrinogen determination was not obtained.

An infusion of 5% glucose in distilled water, containing 50 mg. of emulsified vitamin K₁ and 1 gram of vitamin C was administered. Labor progressed rapidly and the patient's condition remained good until the time of delivery. A capillary fragility test showed no petechiae.

At 12:25 A. M., March 25, the patient was delivered of a non-macerated, stillborn male child, together with the placenta, a large clot and blood estimated at 1000 c.c. Ergotrate was given intravenously and the uterus remained firm and well contracted. However, profuse bleeding continued with no evidence of clot formation.

A transfusion of 1000 c.c. of blood was started immediately. 2 grams of fibrinogen in normal saline (filtered) were given in the other arm. When clotting failed to occur this was followed by another 2 grams. The patient was now in moderate clinical shock. At 2:15 A. M. a third unit of 2 grams of fibrinogen was given. Ten minutes later definite clotting of vaginal blood was observed for the first time since the original retro-placental clot was expelled. Following this the vaginal flow remained normal in amount.

Blood drawn at 2:40 A. M., 25 minutes following the administration of the third unit of fibrinogen, showed a Lee-White clotting time of 6 and 11 minutes. The clot retracted well and did not liquify on incubation.

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On the second post-partum day the patient's hemoglobin was 7 grams and the red blood count 1.9 million. 500 c.c. of blood were given.

On the fifth post-partum day the hemoglobin was 10 grams, the red count 2.7 million, the platelet count 237,000 and the prothrombin concentration 100% of normal.

The patient was discharged in good condition on the ninth post-partum day. Subsequently she has had symptoms of a mild phlebitis of her right leg. This is responding satisfactorily to anti-coagulant therapy.

DISCUSSION

It is beyond the intent of this report to review the complex theories of the coagulation mechanism. Indeed, such a review would be superfluous in the light of Stefanini's recent excellent discussion.⁵ However, we may recall for the purposes of this paper two aspects of this mechanism: (1) Under the influence of thromboplastin prothrombin is converted to thrombin; fibrinogen, in the presence of thrombin, is converted into fibrin, the basis of the blood clot. When blood fibrinogen levels are below 100 to 150 mg. percent (normal: 200-330 mg. percent), no clot, or only an unstable clot, may form. (2) Once formed a clot normally eventually undergoes dissolution (recanalization process). This dissolution is partly, at least, due to the activity of "clot-dissolvers" or fibrinolysins. These latter, when abnormally activated, may function to reduce blood fibrinogen levels dangerously.^{1, 3}

With these facts in mind it has been postulated that either one or both of the following mechanisms may account for reduction of fibrinogen in the non-obstetrical and obstetrical diseases listed earlier: (1) Thromboplastin is released into the blood stream from some unusual source (lung tissue during surgery, damaged decidua in abruptio placentae, etc.) and initiates intravascular clotting of sufficient degree to exhaust the available supply of fibrinogen. Present evidence indicates that at least in abruptio placentae, thromboplastin is the most likely substance responsible for defibrination.³ This theory would help to explain thrombotic manifestations seen in some patients⁶ with premature separation, our own perhaps included. (2) Profibrinolysin, a precursor normally present in blood, is activated to fibrinolysin by kinases liberated from many different types of injured tissues. Fibrinolysin then destroys fibrinogen and probably other plasma proteins as well.¹ In our patient the formation of a soft clot which dissolved in the water bath may be evidence in favor of this mechanism in addition to the thromboplastin mechanism.

Because the blood fibrinogen level of this patient was not determined we do not regard the diagnosis as conclusively proved. In the absence of evidence of

liver disease or dietary insufficiency it is unlikely that the clotting of blood was restored by emulsified K_1 or vitamin C. The low platelet count is in keeping with the concept of considerable intravascular clotting which used up available platelets as well as fibrinogen. The prothrombin concentration of 0% may have reflected such a low level of fibrinogen that this test could not go to completion on that basis alone. Addition of fibrinogen to the prothrombin tube might have clarified this point but no excess was available for this use. Accordingly, accelerator deficiency was not absolutely ruled out.

Fibrinogen (Cohn's Fraction I) used in treating this patient was kindly supplied by Dr. Louis K. Diamond. This material, though treated by nitrogen mustard, may have the same icterogenic potential as plasma from similar sources. It therefore should be reserved for situations of true emergency when the diagnosis seems reasonably well established. Because, in the form available, fibrinogen is not completely soluble it was administered through a transfusion filter.

We should like to emphasize the simplicity of the test upon which the diagnosis of hypofibrinogenemia may be based. Weiner et al.³ believe that failure of freshly drawn venous blood to clot or to form a normal-sized stable clot in their cases of abruptio placentae was sufficient evidence to conclude that the blood fibrinogen had become reduced to a critical level. Further, hemostasis was considered inadequate if the clot dissolved within an hour at 37° C.

It is felt that in an appropriate clinical situation, where bleeding is not otherwise explained, this syndrome should be suspected. The usual battery of coagulation tests in such cases should be augmented by the "clot observation" test and a blood fibrinogen level where possible. It would seem wise to perform this test routinely in the three obstetrical complications enumerated earlier, as well as, perhaps, following lung surgery.

SUMMARY

A case of presumed hypofibrinogenemia complicating abruptio placentae is presented. The diagnosis was suspected prior to any eventful bleeding by means of the "clot observation" test and arrangements were made to administer fibrinogen. Clot formation began and bleeding ceased following therapy with 6 grams of this substance.

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BRAIN ABSCESS IN A PATIENT WITH THE TETRALOGY OF FALLOT

Report of a Case with Recovery

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Brain abscess as a complication of the Tetralogy of Fallot is relatively common,¹ yet the report of successfully operated cases is very rare.

Sancetta and Zimmerman² have recently brought the literature of paradoxical brain abscess in congenital heart disease up to date, with a review of 42 cases and a report of 2 cases of their own. In their series, brain abscess occurred most frequently in cases of Tetralogy of Fallot (23 out of 42) and in patients with interventricular defect (8 out of 42).

Brown,³ in his book on congenital heart disease, says "diagnosis of brain abscess will rarely be positively made during life although it may be suspected if the clinical phenomena are kept in mind." Meningitis and brain abscess are especially prone to occur in patients with polycythemia, and, prior to the development of chemotherapy, were relatively common terminal events.⁴

We wish to report a case of brain abscess in a child of two and a half with Tetralogy of Fallot in which early diagnosis and treatment permitted recovery so that a subsequent operation to increase pulmonary blood flow was possible. As far as we know it is one of the first such cases reported in the literature in cyanotic congenital heart disease. Wechsler and Kaplan⁵ in 1940 reported two cases diagnosed correctly ante mortem but both cases succumbed in spite of surgical drainage. Smolik et al. in 1946⁶ presented a case of brain abscess with recovery in a girl 9 years of age with a diagnosis of patent ductus arteriosus or interventricular septal defect. Two instances of successful operations for brain abscess in patients with congenital heart disease, of the Tetralogy of Fallot type, have just been reported.^{7, 8}

CASE

G. D. T., a 2 4/12-year-old white female child, was first admitted to the Children's Medical Center, January 30, 1950, because of fever, upper respiratory infection, increasing dyspnea, cyanosis, and diarrhea.

Except for known congenital heart disease, she had done quite well until two weeks prior to admission when she was treated for a sore throat by her family physician with parenteral and oral penicillin. She improved until one week before entry when her temperature rose to 103 degrees. She was then

treated with aureomycin which was taken with great difficulty, as were fluids and food.

Past History—Prenatal, family and birth history were uneventful. There had been two episodes of pneumonia in infancy treated with antibiotics with good recovery without use of oxygen.

At 3 months of age the patient was first noted to have episodes of cyanosis and fainting following feeding. She was then taken to several physicians because of these mild cyanotic spells and the parents were told she had congenital heart disease because a murmur was heard. Six months prior to admission, at the age of 1 10/12 years, she developed dyspnea on exertion. There had been no hemoptysis, hematemesis or dysphagia.

Physical Examination—Temp. 99.4° F., pulse 72, resp. 36, blood pressure (3-inch cuff) left arm—110/90, (Adult cuff) left leg—90/60. Patient was a well developed and nourished female who did not appear acutely ill. The lips were cyanotic as were the nail beds. However the cyanosis subsided quite markedly after the patient lay quietly for a short while. There was clubbing of the fingers and toes. In the left optic fundus there was slight blurring of the nasal side of the disc; in the right fundus the margins of the disc were somewhat blurred, although no definite papilledema could be made out.

The lungs were clear to percussion and auscultation. The heart seemed somewhat enlarged with the point of maximum impulse in the 5th interspace 2 cm. to the left of the mid clavicular line. No cardiac dullness was noted to the right of the sternum. A thrill was palpable in the second left interspace. A grade III harsh systolic murmur was best heard over the pulmonic area, transmitted to the entire precordium, axilla, and back. No diastolic murmurs were heard. The liver edge was palpable at the right costal margin. The spleen was not felt.

Laboratory Data (Admission): Hgb. 18 grams per cent, red blood cells 5.69 million, white blood cells 14,600 per cubic millimeter, with a differential count of 47% polymorphonuclear leukocytes, 48% lymphocytes, and 5% monocytes. The urine was cloudy, with pH 5.5, specific gravity 1.010, albumin negative, sugar negative, acetone negative, microscopic examination of the sediment negative. Culture of the nose yielded *pneumococcus*; throat culture;

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many *staphylococcus aureus*; blood culture: no growth.

Progress:

Shortly after entry the child's temperature began to rise. She showed signs of an upper respiratory infection, with dehydration as a result of diarrhea, and she was treated accordingly.

Seventeen hours after entry the picture changed suddenly and completely, and a new phase of her disease began. She became more acutely ill; her eyes developed a fixed stare. The right pupil became dilated; the left pupil pinpoint in size. There were periods of apnea. Twitching motions were noted, and although she was irritable to touch, she did not respond. A lumbar puncture was performed to rule out meningitis, but was negative.

A neurosurgical consultant was called who found the patient almost moribund and semi-comatose, with a partial left hemiparesis including the face, bilateral Babinski's sign, and increased abdominal reflexes. On the basis of the evidence of increased intracranial pressure, localizing signs of a lesion in the right temporo-parietal region, and the congenital cardiac defect, a presumptive diagnosis of brain abscess was made.

Operation:

A burr hole was made in the right temporo-parietal area. Needle aspiration was carried out and 65 c.c. of thin yellow pus was obtained from the right temporal lobe. Penicillin was instilled. Within 30 minutes after the abscess had been aspirated, the child was awake and talking with her parents.

Post-Operative Progress:

The patient was kept on symptomatic treatment and antibiotics: penicillin 150,000 units every three hours, streptomycin 60 mg. every three hours, and sulfadiazine 250 mg. every 4 hours.

The left hemiparesis persisted for six days after the abscess was aspirated. Cultures of the aspirated material revealed *streptococcus viridans* for 3 days, and then became negative. The abscess cavity was irrigated through a rubber catheter which had been left in place at the time of operation. Within 48 hours the patient was taking fluids well by mouth and continued to take adequate amounts without vomiting. Repeated white blood counts revealed a steady decrease to normal levels four days before discharge. A lumbar puncture done following operation, to determine whether or not the subarachnoid space had been contaminated, revealed clear spinal fluid, with 287 white cells, 92% polymorphonuclears, and a total protein of 90 mgms.%. 10,000 units of penicillin was injected intrathecally for protection.

The patient's course following aspiration of the abscess was extremely gratifying. The catheter was removed on the seventh hospital day at which time

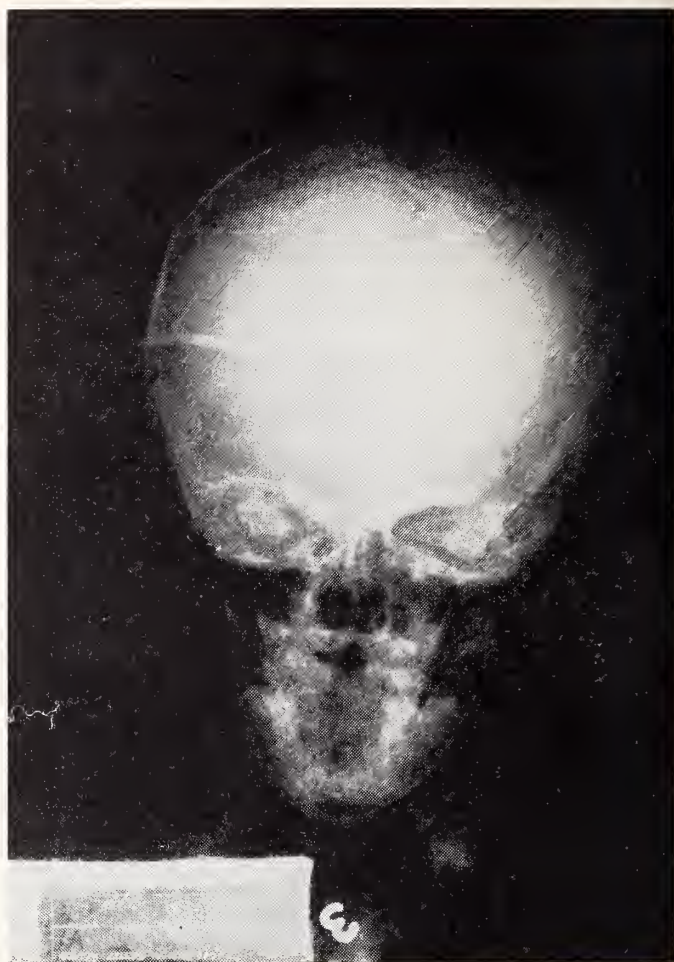


Fig. 1

1/31/50

Examination of the skull shows that the calvarium is within normal limits of size and contour. The bones present normal architecture; the coronal sutures are somewhat prominent suggesting slight separation. There is an opaque rubber catheter entering the right parietal bone and extending very close to the midline. With a small amount of injected opaque material an abscess cavity is partially outlined. The cavity is large and irregular and measures at least 3 x 3 cm.

no solution could be irrigated into the abscess cavity. On the 11th hospital day, the patient was transferred to the Convalescent Home, was sent home two weeks later, February 24, 1950, with no neurological signs and only mild cyanosis.

During the hospital stay the physical findings, fluoroscopy and X-ray of the heart and electrocardiographic findings were sufficient to warrant a diagnosis of Tetralogy of Fallot. By X-ray there was right ventricular hypertrophy and narrowing of the waist of the heart. The pulmonary artery was not easily visible, the apex was rounded with the sheep's nose contour and the lung markings were diminished. The electrocardiogram also showed evidence of right ventricular hypertrophy, with a tall R, small Q, and small S in V₁ and a tall R in AVR, and reversed R/S progression in the unipolar chest leads.

Readmission:

On March 4, 1950, the patient was readmitted to the Medical service with a diagnosis of acute exuda-

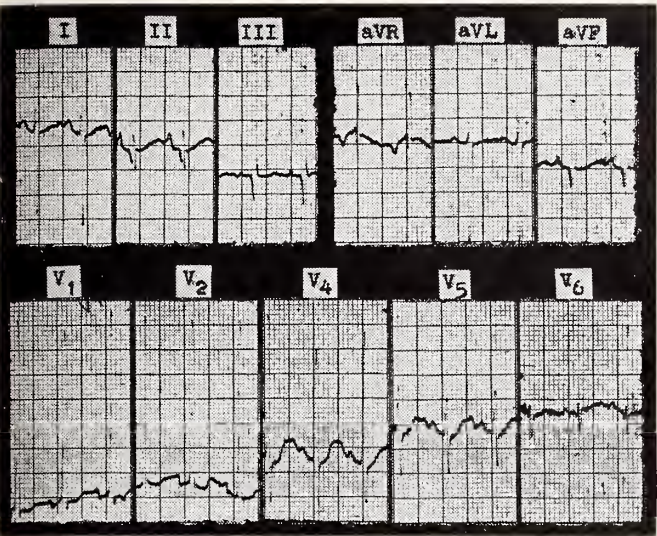


Fig. II

The electrocardiogram on February 1, 1950, revealed (1) sinus tachycardia at a rate of 160 per minute; (2) peaked P waves in Lead II; and (3) unequivocal signs of right ventricular hypertrophy. The latter was evidenced by the characteristic patterns and voltages in the chest leads and AVR. While an Rs pattern in V₁ can sometimes occur normally in this age, the height of the R wave (37 mm.) in this case is definitely beyond the maximum normal variation. Furthermore a complete reversal of the adult type of R/S progression from V₁ to V₆, as shown here by the Rs pattern in V₁ and rS in V₆, is diagnostic of right ventricular hypertrophy and in children is a normal variation limited to the newborn.* Finally the AVR pattern with an R' wave of 9.5 mm. is also grossly pathological. All of these findings of right ventricular hypertrophy and the abnormal P waves are the electrocardiographic changes typically found in Tetralogy of Fallot.**

* Alimurung, M. M., Joseph, L. G., Nadas, A. S., and Massell, B. F.: The Unipolar precordial and extremity electrocardiogram in normal infants and children. (Circulation. In press.)

** Nadas, A. S., Joseph, L. G., Alimurung, M. M., and Massell, B. F.: Electrocardiographic patterns in operable congenital heart diseases. A review of 105 cases proven at operation or autopsy. (To be published.)

tive tonsillitis, bilateral acute catarrhal otitis media and congenital heart disease of the cyanotic type. Admission temperature was 100° F., white blood count 20,000 and blood culture negative. She was discharged six days later on March 10, 1950, on oral penicillin 200,000 units daily prophylactically. An X-ray of the skull taken on the day of discharge showed that the calvarium was within normal limits of size and contour, with no evidence of increased intracranial pressure. There was a small amount of thorotrast remaining in the abscess cavity, but considerably less than on previous examination. She weighed 25¼ lbs., and was 84 cm. tall.

The patient was seen subsequently in the Cardiac Clinic of the Children's Hospital. During her visits there it became obvious that her appetite was poor, her sleep restless, and she was irritable. The cardiac findings were essentially the same as on admission. An operation was advised because of increasing dyspnea, cyanosis and squatting.

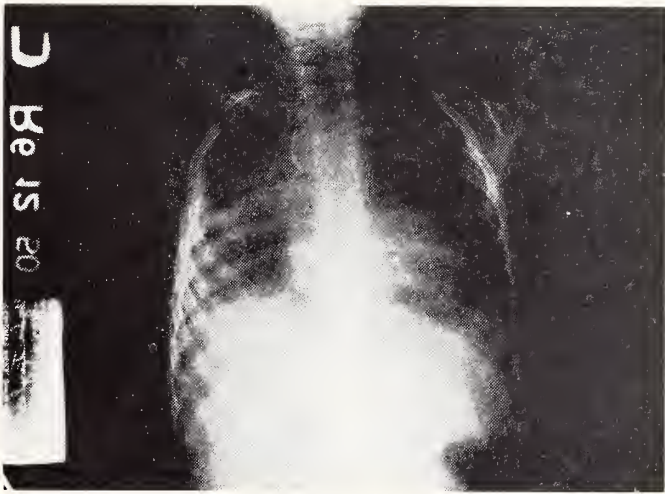


Fig. III

6/12/50

Examination of the chest fourteen days following a right Pott's procedure shows improvement. The right lung is now quite well expanded, but there is slight congestion in the lower half and there is a moderate amount of free fluid in the right pleural space. No change has occurred in the size or contour of the heart and the left lung is clear and still exhibits a small vessel.

3rd Admission:

Accordingly, she was admitted to the Surgical service on May 24, 1950, 5 months after the first admission. Her weight was 26 lbs. She had been receiving 200,000 units of oral penicillin up to this time. The cardiac findings had not changed. Her hemoglobin level on this admission was 15.6 grams %, RBC 5.74 millions, and her hematocrit 61%.

Operation:

The day after admission a Pott's procedure was carried out under cyclopropane-ether anesthesia. The right pulmonary artery was anastomosed to the aorta in end to side fashion. The aortic arch was on the right side, and an anomalous vessel arose from it and passed up to the apex of the chest. No attempt was made to identify or locate the aberrant left subclavian vessel. At the time of operation it was doubtful whether the child would be benefited, due to the small size of the pulmonary artery.

Post-operative Progress:

Two days post-operatively the patient was moving around the bed by herself. After the 6th post-operative day she took a normal diet without trouble. By the 9th post-operative day, she was up and playing about the ward. The hematocrit was 49%. 11 days post-operatively a right thoracotomy was performed because of findings suggesting a hemothorax; but by the 19th post-operative day, a chest film revealed the right lung to be well expanded and the left lung clear. The patient was discharged on June 14, 1950, twenty days after operation.

Laboratory Data: Hemoglobin: 15.6 gms.% on

admission, 14.8 gms.% on discharge. Red blood count: 5.74 millions on admission, 4.25 millions on discharge.

On a follow-up visit on July 25th, two months post-operatively, she was definitely improved. Her mother reported that she could walk and run although she still had to stop and squat. There was a slight cyanosis and a slight clubbing. On September 7th, three and a half months after her operation, she was in excellent condition, with minimal cyanosis and clubbing, and had good exercise tolerance.

DISCUSSION

Brain abscess in cyanotic congenital heart disease first was mentioned by Farre in 1814 and by Peacock in 1881 in cases with lesions similar to those reported by Fallot in his classic paper on Tetralogy in 1888. Of eleven cases of cerebral abscess with congenital heart disease reported by Maronee¹ four had Tetralogy of Fallot. The others had multiple congenital cardiovascular shunts. All eleven cases were over two years of age at the time of death.

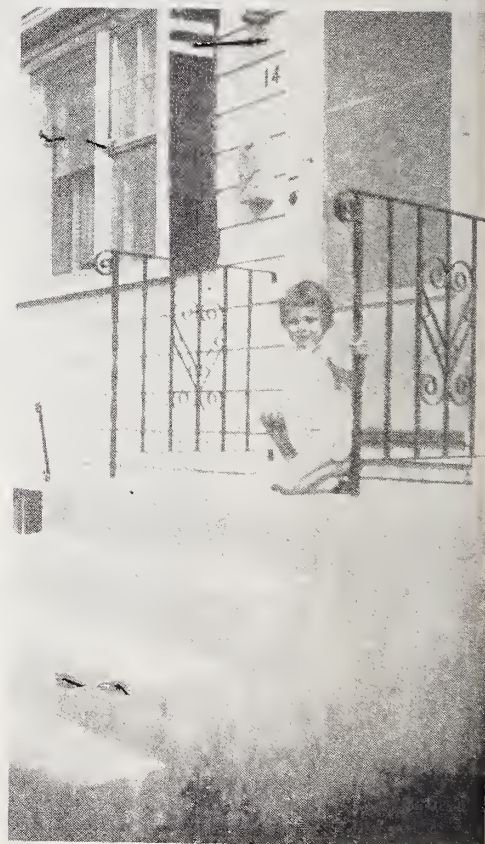
Frequency: Brain abscess in Tetralogy of Fallot

occurs in about 30% to 50% of cases, depending on the series reported.^{1, 2} It is a more frequent complication than bacterial endocarditis. In Gelfman and Levine's⁹ series the incidence of endocarditis in Tetralogy of Fallot was 29% of those patients over two years of age.

Organism: The organism in our case was *streptococcus viridans*. The streptococcus has most frequently been isolated in the reported cases. Other organisms, such as *actinomyces bovis*, *B. coli*, and the staphylococcus, have also been found.

Localization: In Sancetta and Zimmerman's series, twenty-one cases involved the right hemisphere and fifteen the left. In our case, as in most reported cases, the abscess was solitary and not multiple.

Etiology: The high hematocrit characteristic of patients with Tetralogy may easily give rise to thrombosis, particularly when there is dehydration and infection. Infected emboli can readily cross from the right to the left side of the heart and produce paradoxical brain abscess. The transient bacteremia which may give rise to abscess is often not sufficient to cause subacute bacterial endocarditis. Antecedent



POST-OPERATIVE 7/24/51

infections occurred in fifteen out of forty-four cases reported by Sancetta and Zimmerman.²

The diagnosis of brain abscess should especially be considered in young subjects with Tetralogy of Fallot. In such patients, the sudden onset of symptoms referable to the brain, namely headache, lethargy, fever often associated with nausea, vomiting, and localizing signs should make one suspect cerebral abscess. A burr hole over the left or right hemisphere depending on the localizing signs will do no harm even if there is cerebral thrombosis and no abscess. Thromboses are the most serious and frequent complications of the Tetralogy of Fallot, but if the possibility of abscess is not thought of, it will frequently be overlooked.

SUMMARY

An instance of brain abscess in a girl of two and a half years with Tetralogy of Fallot is reported because of its rarity at that age and because the abscess was successfully cured neurosurgically, and the child now has good exercise tolerance and is in excellent condition five months after operation.

G. D. T.: Follow-up on July 24, 1951, 15 months post-operative.

Interval Comments:

Severe case of measles in May, 1951. Weighed 32 pounds prior to this. Mother says she does not become dyspneic or blue until the end of the day after playing hard. Also that she is more active than her other two children. She squatted a lot before operation, now only once a day. She has had no spells or loss of consciousness.

Physical Examination:

Weight 30 pounds. Height 3' 1½". Her general condition is excellent. She showed slight cyanosis of lips and cheeks. Blood pressure was 94/60 in the left arm. The heart was slightly enlarged to percussion. There was a grade II systolic with diminished P₂ in the pulmonic area. Along the right sternal border there was a grade II systolic and diastolic murmur in the 2nd and 3rd right interspace. Rate was 112. There were no signs of facial weakness.

See photograph taken on 7/24/51.

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A TOWN OBSERVES NATIONAL DIABETES WEEK

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November 15 through 21, 1953, was National Diabetes Week. Throughout the United States more than seven hundred medical societies, including those of the states and counties, and various lay organizations observed by various methods this period devoted to public education and the detection of diabetes.

There are approximately one million known diabetics in the United States; and according to surveys, there is at least one unknown diabetic for every known diabetic; consequently, it is believed that there are one million unknown diabetics in the country. In

other words, one out of about every seventy-five people is said to have this disease. According to this rate, there are in the town of Sanford, whose population is slightly over fifteen thousand, approximately two hundred diabetics.

This town, through its local physicians¹ and Community Health Association, carried out a program on diabetes during National Diabetes Week. The endeavor was fashioned after the Diabetes Fair, which has been conducted successfully by the New England Diabetes Association^{1, 2, 3, 4, 5, 6} in Boston, Massachu-

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setts, during this same period for the past four years. The response and the results of this local undertaking were so gratifying that it appeared of interest to present this paper and illustrate how a town may carry out a diabetes program.

METHODS

One of the methods used in Sanford, Maine, was that of a Diabetes Fair. In addition, there was the testing of urines at the hospitals, doctors' offices, the Community Health Office, and several schools. Various other procedures, which will later be described in detail, were also utilized. This project, insofar as can be learned, was the first of its kind to be held in Maine. The purpose of the fair and this program was threefold: (1) to make the public aware of the diabetes problems through education designed to demonstrate the value of early diagnosis and treatment of the disease; (2) to present by exhibits authentic information concerning diabetes and (3) to demonstrate methods of testing the urine for sugar and also to furnish free tests to discover previously unknown cases of diabetes. The hospital and its laboratory took part in this program by having exhibits, doing free tests of urine, and performing blood sugars at a minimum of cost to the patient. The local physicians also tested urines at no charge to the interested individual. Newspaper writeups, radio programs, speakers, and films were other procedures used.

ACCOMMODATIONS

The Diabetes Fair² was held at the Town Hall in 2. Miss Laura Tabour, R. N., Community Health Association, Executive Director, assisted with the exhibits at the local Diabetes Fair and other parts of the program. Sanford on November 19 and 20, Thursday and Friday, from 1 to 6 P. M. Admission and tests were free. The hall is one large room in which there were an information desk, a desk for registering, various exhibits, and a booth where people brought their urines to be tested.

EXHIBITS

A variety of exhibits presented information concerning the detection of diabetes and various phases of this disorder. These exhibits which were on display at the Sanford Town Hall included a pharmaceutical display; an illustration of the relationship of dentistry to diabetes; a presentation of the association of eye diseases to this condition; an exhibit on diabetic foot care; one for normal height, weight, and obesity; a presentation of books for the laity; and a diabetic display which was developed around the six exchange lists for milk, fruit, vegetables, bread, meat, and fat. Tables for distribution of literature by various insurance companies and a detection booth where urines were brought for examination were also in evidence.

MOTION PICTURES

Films were another part of the program. Included in this group were "Fred Bauer Waits," "They Live Again," "The Story of Wendy Hill," "Education of Diabetic Patients," and a movie trailer.

The first of these, "Fred Bauer Waits," is a 16 mm. black and white sound film which runs about 27 minutes. This stirring picture concerns a family man who believes he has the symptoms of cancer and postpones seeing his physician for a check-up. He ultimately visits his doctor and finds out that he has severe diabetes. This discovery results in successful therapy and underscores the risks involved in self-diagnosis. This film is available on loan from the Association Films, Inc.

The second of these, "They Live Again," is a 16 mm. black and white sound film which runs approximately 11 minutes and tells the story of the discovery of insulin by Banting & Best. It is available on loan from the Committee on Medical Motion Pictures of the American Medical Association.

The third is "The Story of Wendy Hill," which describes the experiences of a young diabetic mother. It is a 16 mm. color and sound film which runs 18 minutes. This may be secured from most State Health Departments.

The fourth, "Education of Diabetic Patients," is a 16 mm. black and white silent film which runs about 17 minutes. It explains the value of proper training for patients and outlines the methods of instruction. The film is available on loan from the Metropolitan Life Insurance Company.

The last of this group to be used was a 20-second Bill Talbert sound film spot announcement in the form of a movie trailer for motion picture theaters on 35 mm. black and white. These films were shown on the programs of local organizations such as the Rotary and Kiwanis Clubs; The Professional Nurses Group of Sanford; the Community Health Association; and various Parent-Teacher Associations. The movie trailer was shown exclusively at the Capitol Theater, Sanford's local cinema.

METHODS OF URINE TESTING

There were three methods used for testing urine for glycosuria: the Galatest, the Clinitest, and the Benedict Test.

The Galatest is performed⁷ simply by depositing one drop of urine on a little Galatest Powder placed on paper and covering an area $\frac{1}{4}$ inch in diameter. If sugar is present, the powder will turn immediately grey or black depending on the amount of sugar present. If sugar is not present, the white powder will take on the color of urine.

The Clinitest is done by placing 5 drops of urine and 10 drops of water in a test tube and adding one Clinitest tablet. After waiting fifteen seconds the tube is shaken gently and color noted. A positive test

for sugar is indicated by colors ranging from green to orange depending on the amount of sugar present.

The Benedict Test consists of adding 8 drops of urine to 5 c.c.'s of Benedict solution. The tube is then immersed in a boiling water bath for five minutes. A positive test for sugar is indicated by colors ranging from green to orange depending on the amount of sugar present.

SPEAKERS

Various speakers on diabetes were presented on the programs of local organizations such as The Rotary, Lions,³ and Kiwanis Clubs; the Professional Nurses Group of Sanford; the Community Health Association; and various Parent-Teacher Associations. About 200 individuals attended the various Parent-Teacher Association meetings, and a similar number attended the various service club gatherings. In addition, approximately thirty nurses were present at the meeting of the local nurses' association, and many more people visited the Sanford Town Hall during the exhibition period. A large but unestimated number visited their doctors and the Goodall Hospital during this period.

PERSONNEL

The local physicians of Sanford participated freely in this endeavor. The Community Health Association, with its nursing staff and lay members, assisted in making this event a success. The Goodall Hospital, through its administrator,⁴ contributed the services of the laboratory and its technicians, its dietician, and other personnel to this project. Local pharmacists, dentists, podiatrist, and members of the laity were also among the participants.

PUBLICITY

The publicity carried out was through the medium of newspapers, posters, distribution of pamphlets, radio, speakers, motion pictures, and the Diabetes Fair. The *Sanford Tribune*, the local newspaper, through weekly articles and editorials on the subject of diabetes made noteworthy contribution to this effort. The *Portland Press Herald*, a Portland daily paper, publicized the event by the printing of frequent articles. Pamphlets concerning this disease, published by the American Diabetes Association, were distributed at the various meetings already mentioned and also at the doctors' offices, the Town Hall, and the hospital. Striking and modernistic posters, which were also contributed by the American Diabetes Association, were placed all over town and indicated the date of this period and the detection centers. In addition, the radio broadcasting facilities of Station WIDE, Biddeford, Maine, and WWNH, Rochester, New Hampshire, gave considerable radio time to publicize this project through talks and spot announcements.

The manager of the Capitol Theatre, Sanford's local movie, stated that during diabetes week about seven thousand people saw the diabetic short featuring Bill Talbot.

DETECTION DRIVE

As has already been stated, urines were examined free of charge by the local physicians. Other detection centers were the laboratory of the Goodall Hospital, the office of the Community Health Association, and various schools where certain grades were checked for glycosuria. The Sanford Town Hall was another center at the time of the Diabetic Fair.

RESULTS OF URINE TESTING

Of the 247 students tested there were nine or 3.6% who showed positive tests for glycosuria. There were 572 adult persons examined at the Fair and in doctors' offices. Of these there were seven or 1.2% known cases of diabetes. In addition, there were eleven or 2% newly discovered cases of glycosuria. How many of these cases of glycosuria will be diabetic is not known now.

According to Blotner,⁸ who studied the incidence of diabetes in a group of selectees of various nationalities, the highest incident was in the group whose national origin was French-Canadian, Irish, or English. This may account for the comparatively high incidence of diabetes observed in the group examined in Sanford, as the population of this town is composed mainly of those people who are of either French-Canadian or English extraction.

SUMMARY

This paper describes a plan whereby a town may carry out a Diabetes program during National Diabetes Week. The various activities of Diabetes Week and the response to these activities indicate the value of such an endeavor in educating the public concerning diabetes. There was a gratifying response from the public who was anxious to learn of diabetes.

Of 247 school children tested 3.6% showed glycosuria. Of 572 adults tested there were 1.2% known cases of diabetes in addition to 2% newly discovered cases of glycosuria. The cases with glycosuria were referred to their family physicians for further evaluation.

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FLUORIDATION OF COMMUNITY WATER SUPPLIES AS A MEANS OF CONTROLLING DENTAL CARIES

DEAN H. FISHER, M. D., Director of Health, Department of Health and Welfare, Augusta, Maine

The question of fluoridation of water supplies has given rise to much discussion based on misunderstandings, half truths, lack of information, and lack of objectivity. Much of the discussion has become unnecessarily emotional.

There are many hundreds of reports of studies relating to fluorides in reputable medical and other scientific literature. Anyone can easily go to these sources for the same kind of objective, factual, and reproducible data that might be studied in relation to any medical question.

SAFETY OF FLUORIDATED WATER

Opposition arises from a failure to think in quantitative terms, and to realize the characteristics of the materials and systems under consideration. For example, much is made of sodium fluoride as a "rat poison," when as a matter of fact the compound has never been successfully used for this purpose because it is not sufficiently toxic. The acute toxic dose for humans is on the order of 500 mgm. or more. The concentration necessary to inhibit some enzyme systems is of the order of 1 mgm. per c.c. At levels of 1 part per million of fluoride ion, drinking water would contain about 2 mgm. of sodium fluoride per quart. Balance studies show that 8 to 10 mgm. of sodium fluoride can be excreted daily. Standard water treatment equipment is capable of maintaining dosages to within plus or minus 10% of the desired level. Individual ingestion based on unusual water consumption might give rise to occasional consumption of sodium fluoride equivalent to the level of 3 to 4 p.p.m. If such a combination of circumstances were to continue for months or years, the only observable ill effect would probably be enamel mottling which is known to be the most sensitive and the earliest indicator of chronic overdosage.

Maine has one of the highest dental caries rates in the United States. Aside from the economic burden, what physician interested in his patient as a whole and knowing the relationship between deciduous and permanent teeth, between teeth and diet, between teeth and certain types of infection, and knowing the psychological benefits of physical attractiveness, can say that good teeth do not contribute to general wellbeing.

It is an observed fact, confirmed by thousands of observations, that an optimum intake of fluorides will result in a decrease in dental decay in children of up to 65%. Furthermore, it is equally well known that these same children will continue to have vastly better teeth as adults than they would otherwise have.

Thus benefits are not limited to children, but simply to children at the beginning of the supplementation of a public water supply.

The harmlessness, ease of operation, cheapness, and effectiveness of fluoridation of water supplies have now been amply demonstrated by continuous controlled community wide studies carried on since 1945 in Grand Rapids, Michigan, and Newburgh, New York, and in other areas for shorter periods. Some 900 communities in 42 states, including many large cities, have studied the procedure and have adopted it for water supplies serving over 16,000,000 people. Furthermore, for 20 years observations have been made on a naturally occurring experiment in which 3,000,000 people have taken part by living in areas where water supplies have fortuitously contained fluorides up to 10 to 12 p.p.m. Probably most of these people have lived in such areas all their lives as have the generations preceding them. Certainly this has been a large enough test area, and has been observed sufficiently closely by both practicing physicians and those with special interests so that any deleterious effects of fluoride ingestion would be recognized. The conclusion that can be drawn from these observations is that with continuous ingestion levels above 1.5 p.p.m. will cause mottled enamel, but there is no evidence of any other toxic effect in spite of lifelong ingestion of fluorides up to 10 times the recommended dosage.

The safety and propriety of treating fluoride deficient waters has been recognized by the House of Delegates of the American Medical Association, and by the Councils on Foods and Drugs. Fluoridation has been endorsed by the National Research Council, and literally dozens of other scientific groups, all of whom probably have relatively minor representation by public health officials. We have in our files statements of approval or endorsement by 26 state medical societies. I have no way of knowing the number of county societies that may have taken independent action, but the El Paso County Society (130 members serving the Colorado Springs area) passed the following resolution on December 9, 1953:

"WHEREAS, there is substantial evidence that the water supply of Colorado Springs has contained a surplus amount (2.6 parts per million) of fluoride for a period of about 75 years;

"BE IT RESOLVED that during the long practice of medicine in Colorado Springs, it is the considered opinion of the members of El Paso County Medical Society that we have not ex-

perienced any clinical symptoms which can be attributed to the use of such water. It is known, however, that a condition known as 'mottled enamel' can be produced by the use of water containing an excess of fluoride."

I think it is safe to assume that these medical societies have not taken their actions until they were satisfied on the basis of their own investigations that their positions were sound.

We also have general statements of approval from 24 eastern dental schools, many of which, like Harvard and Tufts, are closely related to medical schools. Individuals such as Dr. Stare, Professor of Nutrition at Harvard, and Dr. Richard Ford, the pathologist, recognize fluoridation of water supplies as a safe, effective public health measure.

Much seems to be made of the possible ill effects of fluorides in water in the aged or chronically ill. I should like to quote in toto a statement made March 17, 1954, by the Commission on Chronic Illness, an independent agency jointly founded by the American Medical, Hospital, Public Health and Public Welfare Associations, and entitled "Effects of Fluoridation of Community Water Supplies Upon the Aged and Chronically Ill."

"Prevention of the occurrence of disease — or prevention of its progress — is generally accepted as the most desirable solution to the growing problem of chronic illness in this country. The Commission on Chronic Illness is interested in furthering the adoption and use of any public health measures that will contribute to the prevention of chronic illness.

"Fluoridation of community water supplies has been undertaken by many communities as a public health measure directed toward the prevention of dental caries. Fluoridation of public water supplies has been endorsed by leading professional organizations in the field. Dental caries is an important chronic disease — important in terms of widespread prevalence and destruction of useful tissue — also important in the way that resulting loss of teeth may complicate the life of aged persons and persons suffering other disabling conditions.

"The major portion of scientific opinion is that fluoridation of water supplies for the prevention of dental caries presents no hazard to public health.² A minority view is held by a number of qualified scientists who believe that the safety of this procedure has not been sufficiently demonstrated. Cognizant of the fact that fluoride compounds in large doses are poisonous, they advance the hypothesis that the small amounts contained in fluoridated water consumed over many years may by cumulation have subtle physiological effects especially detrimental to the aged and the chronically ill.

"The Commission, concerned with the problems of chronic illness, did not feel that it could recommend

fluoridation of public water supplies without first taking cognizance of the possibility of detrimental effects. At the request of the Board of Directors of the Commission, a committee of distinguished scientists reviewed and evaluated the available evidence to decide whether at this time a positive position could be taken with regard to this hypothetical danger. The committee was under the chairmanship of Dr. Kenneth F. Maxcy, Professor of Epidemiology, Johns Hopkins University School of Hygiene and Public Health, Baltimore. The other members were Dr. Edward J. Stieglitz, outstanding geriatrician of Washington, D. C., and Dr. Nathan Shock, Chief of the Section on Gerontology, National Institutes of Health, Public Health Service. This committee reports as follows:

"The basic facts concerning fluoridation which have been established by the investigations of the past 20 years have been briefly set forth in the report of the Ad Hoc Committee on Fluoridation of the National Research Council.¹ Under normal condition of living, fluorine is a trace element in human nutrition. Although minute amounts are present in certain foods and beverages, a variable and important source is drinking water. Public water supplies vary widely in the amount of fluoride naturally present. Children dependent upon supplies that are low in fluorides have a high dental caries attack rate as compared to children living in communities having water supplies containing about 1 p.p.m. (parts per million) or more of fluoride. The advantage to the latter group is considerable: the incidence of caries is reduced by $\frac{1}{2}$ to $\frac{2}{3}$. The caries preventive effect of adequate fluoride intake is principally conferred upon children up to the twelfth year of life, during the period when dentine and enamel of permanent dentition are being formed. However, increased resistance to dental caries is carried over into later life to an appreciable degree.

"When the trace quantities in drinking water required for optimal dental health are exceeded, undesirable physiological effects may be induced. The most sensitive indication of the latter is interference with normal calcification of the teeth, which is manifested in mottled enamel. This effect, although compatible with caries resistant tooth structure, is esthetically undesirable. The level of fluoride concentration in drinking water which is associated with the appearance of mottled enamel varies with individual susceptibility and the amount of water consumed. Under the climatological conditions of the northern part of the country it is reached when the fluoride content of domestic water supplies exceeds 1.5 p.p.m.

"In view of these facts, Trendley Dean³ and his associates developed the hypothesis that by adding fluorides in proper amounts to water supplies which were deficient or low in this element it was possible

to afford optimum caries preventive effect without causing mottled enamel. Controlled studies were begun in 1945 to test this hypothesis in Grand Rapids, Muskegon, Mich.; Aurora, Illinois,⁴ and in Newburgh and Kingston, New York.⁵ Results now available from these studies are such as to definitely establish that the protection against caries given by naturally occurring fluorides is also conferred by water to which this element has been artificially added. Careful annual medical examinations of children in the latter study including X-rays, urine analysis, and other laboratory tests over a six-year period have failed to uncover any adverse effect from fluoridated drinking water. The children in Newburgh drinking fluoridated water showed no significant deviation in height or weight growth from those in Kingston where the water was essentially fluoride free.

"The question posed by the minority of scientists is whether fluoride added to drinking water in quantities insufficient to cause mottled enamel (i.e., to a level of approximately 1 p.p.m.) have, by cumulation in tissues, any physiological effects which may be detrimental to adults and to the chronically ill. Information bearing upon this question has been derived from two sources: (1) studies on the metabolism of fluorides in man and in experimental animals; (2) observations on human populations exposed to water supplies having a fluoride content in excess of 1.5 p.p.m.

"The extensive literature dealing with metabolism and toxicology of fluoride compounds has been reviewed by the National Institute of Dental Research, U. S. Public Health Service⁶ and in an article by F. F. Heyroth in the *Journal of the American Public Health Association*.⁷ In our judgment there has been a sufficient number of observations on human subjects, with support of animal experiments, to establish the pattern of metabolism. Up to a daily intake of 4 or 5 mg. or more fluorides absorbed are almost completely eliminated in the urine and sweat. (To get 5 mg. of fluoride daily one would have to drink about 5 quarts of water containing 1 part per million of fluoride every day.) Any residual is stored in the skeletal system, teeth and bones. Little, if any, remains in the soft tissues, liver, spleen, kidneys, etc. As the level of intake is lowered, stored fluorides tend to be partially eliminated. At high levels of fluoride intake (8 p.p.m. or more) changes occur in bones which may become evident by X-ray (bone fluorosis). However, storage of fluorides in the skeletal structure in the amounts considered here results in no functional disadvantage. In other words, the body possesses two potent protective mechanisms: (1) rapid excretion in the urine; (2) storage in the skeleton.

"These studies of metabolism have been supplemented by a considerable number of observations on

population groups naturally exposed for long periods of time to water supplies with varying fluoride content. In the United States, more than a million people, served by 453 different water supplies have, for generations, used drinking water with a natural fluoride content from 1.5 to 8.0 p.p.m. No definite evidence has been forthcoming that continued consumption of such water is in any way harmful to health. There have been no reports of evidence of changes in bone structure when the water supply contained less than 5 p.p.m.

"In a radiologic survey of 114 persons who had lived for at least 15 years at Bartlett, Texas, where the water supply contained 8 p.p.m., 12% of those examined showed minimal X-ray evidence of increased density of the bones but in no case was there any deformity or interference with function. Medical examinations, which included urinalysis and blood counts, revealed no indication that the residents of Bartlett were less healthy than those of nearby Cameron, where the water contained only 0.3 p.p.m. Reports of bone fluorosis in studies conducted in Italy, India, South Africa and Argentina indicate similar relationships to the use of high fluoride bearing waters.

"It is to be emphasized that the proponents of fluoridation of water recognize that excessive ingestion of fluorides is undesirable and that, where practical, they should either be removed by a treatment process or new sources of supply sought. They stress the necessity of keeping the fluoride content of drinking water below the level of that which causes mottled enamel, the most sensitive indication of an excess.

"On the hypothesis that a higher incidence of chronic disease would be reflected in higher mortality rates due to specific causes, the experience of cities with water supplies having a high fluoride content has been compared with that of cities having a low fluoride content. The most recent and comprehensive study⁸ of such data is one compiled by the U. S. Public Health Service and based on the 1949-50 census reports. In this analysis of mortality rates, all cities in the United States with 10,000 population or over in 1950, whose drinking water contained 0.7 p.p.m. or more of fluoride naturally present were considered for inclusion. Each fluoride city was paired with the average of the three closest fluoride-free cities (with less than 0.2 p.p.m. fluoride) with populations of 10,000 and over. Deaths from cancer, heart disease and nephritis per 100,000 population, adjusted for age, sex and race in 28 fluoride and in 60 non-fluoride cities failed to show significant differences.

"It is the contention of the minority that epidemiological studies or analysis of vital statistics cannot be relied upon to determine whether the condition of sick persons, such as those afflicted with chronic ill-

ness, particularly kidney ailments, would or would not be worsened by the ingestion of fluoridated water. Although the data are limited, experiments recently carried out at the National Institute of Dental Research on somewhat more than 50 cases who have evidence of damaged kidney function and who use drinking water containing 1 p.p.m. of fluoride have come to our attention. The results indicate that the excretion pattern of fluorides in these patients with damaged kidneys is similar to that reported by McClure⁹ for healthy young men. The collection of negative evidence such as this for an absolute determination of no possible effect of fluorides in persons suffering from chronic illnesses is an endless and extremely complicated undertaking. Generally speaking, consideration of the primary factors in the causation of such illnesses far overshadows any minor or secondary effects which, in the light of present knowledge, could be assumed from ingestion of trace amounts of fluoride in drinking water.’”

“The Commission has been advised by the foregoing expert opinion that extensive research into the toxicology of fluorine compounds has revealed no definite evidence that the continued consumption of drinking water containing fluorides at a level of about 1 p.p.m. is in any way harmful to the health of adults or those suffering from chronic illness of any kind. While the evidence does not absolutely exclude this possibility, if a risk exists at all it is so minimal and inconspicuous that it has not been revealed in many years of investigation. The Commission, therefore, urges American communities to adopt this public health measure as a positive step in the prevention of the chronic disease, dental caries.

“The fluoridation of water supplies involves no new experience in human welfare. Over 3,000,000 people are living in ordinary good health on water naturally containing fluorides in the amounts recommended for caries control, or more.”

On April 12, 1954, the Massachusetts Medical Society made a seven page report to the Massachusetts State Legislature which had before it certain bills that would have prohibited fluoridation. All of the bills were defeated. Sections of the Society report are quoted below:

“This is a last hour effort to place the facts on fluoridation in your hands. Much of the ‘facts’ you have received ‘ain’t so.’”

“The Massachusetts Medical Society strongly supports fluoridation.”

The report discusses fluoridation on the basis of sixteen points. The complete report is available from the Department of Health and Welfare in Augusta, but additional excerpts are worth quoting here:

“Fluorides of various types are poisonous if taken in sufficient quantity. This is the stock-in-trade of the emotional opponents of fluoridation who shriek

‘rat poison’ at every opportunity. It must be clearly recognized that between the recommended one part per million of fluoride and the harmful or toxic dosage lies an area or factor of safety which is several hundredfold.”

“There is not one shred of valid scientific evidence that fluoride in the recommended amount of one part per million in water supplies has ever harmed anyone.”

“The benefit is primarily to children through fluoride taken in by the mother during the prenatal period, and by the child during his early years while teeth are forming. Certainly teeth which are preserved in childhood are an advantage to the adult of tomorrow.”

“There is no major scientific organization of any repute which is at this time opposed to fluoridation.”

The St. Louis (Mo.) Medical Society has prepared a special sixteen page report on this subject, and printed it in the February, 1954, issue of *MISSOURI MEDICINE*. Reprints may be purchased from the source. “The report is a documented study of the source material pertinent to the question of the safety of fluoridation which has improperly been made to appear so controversial.”

It has been interesting to us to investigate the ultimate sources of much of the “information” which has served to confuse and mislead people. These ultimate sources are surprisingly few, and many are surprisingly similar in character. For example, the interested reader can go to the Better Business Bureau or the Federal Food and Drug Administration for reports on Dr. Lee and his Nutritional Research Foundation. In fact, the Better Business Bureau may be helpful whenever pamphlets or similar material are being offered for sale. A Charles E. Perkins is styled in some of his writings as a cancer expert. The American Cancer Society is an authoritative source for information on his scientific stature. Certainly the qualifications of any source of information should be known before the information from that source is given any great value. If such investigations are done on the sources of anti-fluoridation material one is soon forced to ask himself whether this issue is really controversial.

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DIPHTHERIA-PERTUSSIS-TETANUS IMMUNIZING OF INFANTS

ARMAND ALBERT, M. D., Van Buren, Maine

During the last decade we have been viewing with considerable alarm, the steadily increasing prevalence of whooping-cough, in infants from birth to the age of six months. Some thirty years ago, an infant with whooping-cough was a rarity, but in the fall of 1952 we saw ten cases, with one infant dying at the age of two months after an illness of two weeks, and before we could receive the vaccine which we had feverishly been wiring for and which might have saved its life.

And we have also been seeing with grave concern, the number of nursing mothers dwindle down to a mere trickle. When we started practicing medicine in the St. John Valley, some thirty years ago, maternal nursing was the ordinary and customary thing, and when a mother could not nurse her child a wet nurse was found who would. However, with the years came progress? and with progress, the fancied need to keep one's shape, and being free to go to the pictures, and to travel, etc., etc., so that nowadays we see one mother in 25 that will attempt to nurse. Those that do nurse are the mothers in their thirties, and very few young mothers are even willing to try. I can safely predict that ten years hence, a mother seen nursing her offspring, will be as rare a find as the dodo, and she will make the front page of all the tabloids.

The ever increasing number of whooping-cough cases on the one hand, and the nearly extinct mothers' nursing on the other, have made us conclude that the two were closely related. We, at the Hotel-Dieu Hospital, thereupon started immunizing all newborn, whose mothers were willing, with diphtheria and tetanus toxoid and pertussis vaccine combined. This was in January, 1953, and so far we have a record of about 130 infants thus immunized. The mothers are asked to return for the other two successive doses, either to the hospital or to their doctor's office. The dose is the same as that given at the public clinics, i.e. $\frac{1}{2}$ c.c. each month, injected in the buttock, and so far we have seen not the slightest untoward reaction. In fact we believe that infants tolerate it much better than older children.

Although it is still too early to reach a definite conclusion, so far we have not seen a single case of whooping-cough among the infants thus immunized. We then advise a booster shot at 2 years of age, and then the regular pre-school immunization.

We sincerely believe that we are advancing a step forward in the prevention of whooping-cough, and would encourage other obstetricians and pediatricians to try this early immunization. We are quite sure they will find it worth while, and moreover the parents of the children will appreciate this extra service and realize its benefits.

Audio-Digest Offers "Two for the Money"

Busy physicians cannot afford to pass up this opportunity to get "two for the price of one" in the form of postgraduate medical education and a chance to support the nation's medical schools. The American Medical Education Foundation recently announced that a new source of funds now is available to medical schools through physician-support of the Audio-Digest Foundation. For a nominal weekly subscription fee, physicians receive from the Audio-Digest Foundation tape-recorded abstracts of cur-

rent literature, lectures, etc., culled from current medical periodicals in all fields of medicine. This Foundation, organized by the California Medical Association, will turn over its profits to the AMEF.

State AMEF chairmen have been asked to support the national promotion of this new service as an additional means of raising funds for medical education. This should prove a tremendous boost to the AMEF's 1954 campaign drive for two million dollars from the medical profession to assist the country's 79-approved medical schools.

The Journal of the Maine Medical Association

THOMAS A. FOSTER, M. D., Portland, Editor

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Annual Meetings

June approaches, the month for our 101st annual meeting. This year the meeting will be held at The Samoset Hotel overlooking the wide expanse of beautiful Penobscot Bay. The Program Committee discovered by questioning the members of the Association that the Samoset was the first choice of the majority. Many of the members who were questioned replied that the 1952 meeting at the Samoset was successful in all respects.

The Committee, also, discovered that a strong sentiment for a gay and social meeting with lots of free time for outside activities prevailed. Accordingly, a program in keeping with the sentiment expressed has been arranged. Men of high quality and proven accomplishment will appear before the general assembly at four meetings. Plans for conferences, round table groups and panel discussions have been omitted this year in favor of the large general meeting. It will be interesting to learn at a later date the opinion of the membership regarding this type of scientific program.

Fifty and more years ago the association met in

June, usually at one of the larger cities. The programs were impressive. They included an annual address by the President, and an annual oration by a distinguished member of the profession, local or out of state; reports from various committees and about fifteen or sixteen scientific papers.

In 1902, the annual meeting program presented among others, the following subjects; Annual Oration, Medical Libraries, President's Address by Frederick Henry Gerrish, Appendicitis, Tuberculosis, Syphilis, Culture Methods in Diphtheria, Management of Infectious Diseases, Responsibility in Mental Disease, Gonorrhoea. These were all presented before the general assembly and discussed with interest. Here was material for serious consideration and for the general enlightenment of the medical gentlemen present.

In these days of frequent staff and County Medical Society Meetings with excellent scientific programs perhaps it is not necessary to emphasize the educational aims of our State Society. Perhaps it will be better for all hands to frolic by the sea. We will see.

Report From Headquarters

As the days, weeks, months and now a year passes, it is apparent that the problems confronting the practitioner of medicine, have not vanished with a change in our national administration. A recent article by May Craig (Portland Press Herald, April 15th, 1954) presents, it seems to the writer, a sincere review of many of the anxieties and troubles in the minds of the profession and laity alike.

Some of the big worries are reinsurance for non-

profit, voluntary insurance policies, distribution of good medical care, availability of medical care in urban communities as well as rural, and the high cost of hospital care.

At our Annual Meeting we will have an opportunity of hearing about the approach of the A. M. A. to the problems and the ways and means of helping in the solution. We will be honored at our annual banquet with an address by the President of the

American Medical Association, Dr. E. J. McCormick of Toledo, Ohio. Dr. McCormick gifted with moral courage, apparently tireless energy and an understanding mind, comes to our meeting well prepared to deliver straight talk. He has been an active member of the A. M. A. for many years and has taken part in various important activities. He has traveled over the United States and into other lands as a

representative of American medicine. He has served the B. P. O. E. as Exalted Ruler and visited with the people in all parts of the Country. He, indeed, is familiar with existing conditions and the attitudes and proposals of our national association. Attend the annual meeting prepared to stay through to the end and hear Our President.

Dollars From Doctors

The need for dollars from doctors of Maine for the American Medical Education Foundation continues at the highest level. Despite the increasing interest over the country at large indicated by larger total contributions by a greater number of physicians in 1953, the tangible participation by the doctors of this state looms distressingly small. During the year 1953 exactly twenty-five contributors, 2.81% of all physicians in Maine, gave seven hundred and eighty-five dollars to American Medical Education Foundation; our Woman's Auxiliary group is credited with \$340.25. No figure is available as to the amount contributed by Maine physicians to their several Medical Alumni Associations but one suspects that figure to have been considerable for otherwise our voluntary financial support of the important cause of medical education must have been critically low. During the year 1952 exactly 160 of our number contributed to their own medical schools directly. A review of the total contributions to A.M.E.F. by states for 1953 shows Maine to occupy a position just *nine* from the bottom!

Several statistical figures will afford information as to the progress of American Medical Education Foundation and the National Fund since 1951. In 1951 A.M.E.F. received \$91,000 from 1,853 physicians; in 1952, \$291,000 from 7,259; and in 1953 \$472,000 from 18,176 individual doctors. The overall picture shows gross income of the Foundation in 1951, \$745,000; in 1952 \$906,000; and in 1953 \$1,089,962. The National Fund for Medical Education received contributions during 1953 of \$2,412,582.63* and dur-

ing the same year disbursed grants to medical schools of \$1,944,144.64 with a year-end balance for future distribution of \$524,936.58. The combined totals raised by American Medical Education Foundation and the National Fund in the three years amounts to impressive figures as follows: total raised \$5,569,119.18; distributed to Medical Schools \$4,764,152.79 with balance available for distribution at the 1953 year end \$804,966.39.

The seventy-nine medical schools of the United States need and appreciate the financial aid derivative from efforts of these two national money raising organizations, American Medical Education Foundation and the National Fund. Without such increasing assistance it is doubtful if continued high standards of medical education can be maintained except by large federal assistance. The funds of American Medical Education Foundation are derivative from individual contributions of physicians which in turn stimulate the giving of greater amounts by corporations through the medium of the National Fund. The writer feels that only his own ineffectual approach can account for the failure of his colleagues throughout the State of Maine to espouse this worthy cause by giving generous dollar support. Let me have your contributions or pledges during the annual session at the Samoset.

* Including \$1,044,602.47 from the American Medical Education Foundation.

C. HAROLD JAMESON, M. D.,
Maine Chairman for A.M.E.F.

Surge of Requests For Placement Aid

More physicians are utilizing the services offered by the AMA Physicians' Placement Service than ever before, reports the Council on Medical Service. A brief look at the number of services rendered by the Placement Service during the last three months of 1953 as compared with the same period of 1952 shows: (1) A 95 per cent increase in the number of

requests from communities seeking physicians; (2) A 130 per cent increase in the number of letters of inquiry from physicians seeking places to locate; (3) A 364 per cent increase in the number of physician visits and personal interviews in the AMA office. This Service operates in close coöperation with the 43 state physician placement services.

Program In Brief

MAINE MEDICAL ASSOCIATION

101st ANNUAL SESSION

THE SAMOSET

ROCKLAND, MAINE

SUNDAY, MONDAY, TUESDAY

JUNE 13, 14, 15, 1954



SCIENTIFIC COMMITTEE

RALPH C. STUART, M. D., Guilford, *Chairman*

J. ROBERT DOWNING, M. D., Kennebunk

FRANCIS H. SLEEPER, M. D., Augusta

Sunday, June 13, 1954

12.00 Noon

Registration (Registration throughout the session will be at
The Samoset—Hours to be announced)

2.00 P. M.

First Meeting of the House of Delegates

Robert W. Belknap, M. D., President-elect, Presiding

6.30 P. M.

Dinner:

Speaker: **Mr. Leonard E. Read**, President of The
Foundation for Economic Education, Inc., Irvington-
On-Hudson, New York

Subject: POLITICAL ROBIN HOODISM AND ITS CURE

Monday, June 14, 1954

9.30 A. M.

Second Meeting of the House of Delegates

Robert W. Belknap, M. D., President-elect, Presiding

10.30 A. M.

Maine Heart Association Clinical Program (tentative)

Chairman, **Elton R. Blaisdell, M. D.**, Portland, Vice
President, Maine Heart Association

CLINICAL BALLISTOCARDIOGRAPHY

Mason Trowbridge, Jr., M. D., Ellsworth

Wilbur B. Manter, M. D., Bangor

SURGICAL CARDIAC PROGRAM IN COMMUNITY HOSPITAL

Ralf Martin, M. D., Portland

SPINAL ANESTHESIA IN PATIENTS WITH ARTERIO-
SCLEROTIC HEART DISEASE

Jacob Dana, M. D., Togus

Robert L. Ohler, M. D., Togus

11.00 A. M.

Speaker: **Alton Goldbloom, M. D.**, Montreal (Spon-
sored by the State of Maine Department of Maternal
and Child Health)

Subject: INFANT FEEDING

11.45 A. M.

Visit Technical Exhibits

12.30 P. M.

Luncheon

Luncheon Meetings:

Meeting of Presidents and Secretaries of the County Medi-
cal Societies

Board of Directors of the Maine Heart Association

Speaker: **Rome Betts**, Executive Director, American
Heart Association

2.00 P. M.

General Session:

Presiding, **Ralph C. Stuart, M. D.**

Speaker: **Richard B. Cattell, M. D.**, Director, Lahey
Clinic, Boston

Subject: THE SURGICAL MANAGEMENT OF THYROID DIS-
EASES

3.00 P. M.

Presiding, **Norman H. Nickerson, M. D.**, President
Election of President-elect

Introduction of Visiting Delegates

4.30 P. M.

Visit Technical Exhibits

6.30 P. M.

Clam Bake

Tuesday, June 15, 1954

9.30 A. M.

Maine Medico-Legal Society Business Meeting:

Reports of Officers

Election of Officers

10.00 A. M.

General Session:

Presiding, **J. Robert Downing, M. D.**

Speaker: **Theodore L. Badger, M. D.**, Boston (Spon-
sored by the Maine Tuberculosis Association)

Subject: REST, EXERCISE AND CHEMOTHERAPY IN THE
TREATMENT OF TUBERCULOSIS

11.00 A. M.

Presiding, **Francis H. Sleeper, M. D.**

Speaker: **Donald Coulton, M. D.**, Bangor

Subject: CONTROLLED LABOR

12.00 Noon

Visit Technical Exhibits

12.30 P. M.
Luncheon
Luncheon Meetings :
Indoctrination Meeting for new members of the Maine Medical Association

2.00 P. M.
Maine Medico-Legal Society :
Remarks by Attorney General Alexander A. LaFleur, President, Maine Medico-Legal Society
Remarks by Robert Marx, Chief of State of Maine Police
Address with pictures by Richard Ford, M. D., Head of the Medico-Legal Department, Harvard Medical School

6.30 P. M.
ANNUAL BANQUET
Presentation of medals and awards
President's Address—Norman H. Nickerson, M. D.
Guest Speaker :
Edward J. McCormick, M. D., President, American Medical Association
Subject: THE MIRACLE OF AMERICAN MEDICINE

SPECIAL NOTICES
GOLF TOURNAMENT
Francis A. Winchenbach, M. D., Bath, Chairman
TUESDAY, JUNE 15, 2:00 P. M.
Maine Trudeau Society Organization Meeting

PROGRAM IN BRIEF

Woman's Auxiliary
to the
Maine Medical Association
Sixth Annual Convention, June 13, 14, 15, 1954
Rockland, Maine
Headquarters—The Samoset

INFORMATION
Headquarters for registration, information and purchase of tickets will be in the lobby at The Samoset. There will be a hospitality room for out of town guests. Room service and facilities for bridge will be available and plans for golf and other activities will be made here.

REGISTRATION
Registration on Sunday and throughout the session will be at The Samoset.

PROGRAM
The program includes a tea Sunday afternoon, a luncheon meeting Monday noon preceded by a social hour, Boat rides

Monday afternoon which the men are invited to participate in, Golf Tuesday morning and the Annual Luncheon Tuesday noon. There are also many places of interest which many of you will want to visit. And, you are invited to attend the evening meetings of the Maine Medical Association.

NOTICE
A letter relative to the program has been mailed to each member of the Auxiliary from the Convention Committee of the Woman's Auxiliary to the Knox County Medical Association, who are in charge of arrangements for this meeting.
The complete program will be published in the June issue of the JOURNAL.

CONVENTION RATES

The Samoset
Rockland, Maine

The Samoset :
Double room with private bath—\$14.00 per person per day.
Single room with private bath—\$17.00 per day.
Double or single room with running water—\$12.00 or \$13.00 per person per day.
Cottages on the hotel grounds—rates on request.

Meals for non-registered guests :
Breakfast \$1.50
Luncheon \$2.50
Dinner \$4.00
Banquet \$4.00
Clam Bake \$4.00

For Reservations—write to Mr. Roger P. Sonnabend, General Manager, The Samoset, Rockland, Maine.

MAKE YOUR RESERVATIONS TODAY

COUNTY SOCIETIES

Androscoggin

President, Norman O. Gauvreau, M. D., Lewiston
Secretary, Pauline G. Starks, M. D., Lewiston

Aroostook

President, Clement L. Donahue, M. D., Caribou
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Eugene E. O'Donnell, M. D., Portland
Secretary, Stanley E. Herrick, M. D., Portland

Franklin

President, John W. Friend, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, Mason Trowbridge, Jr., M. D., Ellsworth
Secretary, Arthur M. Joost, Jr., M. D., Bucksport

Kennebec

President, Charles E. Towne, M. D., Waterville
Secretary, Arch H. Morrell, M. D., Augusta

Knox

President, William A. McLellan, M. D., Camden
Secretary, Verla E. Worthing, M. D., Thomaston

Lincoln-Sagadahoc

President, Samuel L. Belknap, M. D., Damariscotta
Secretary, John P. Goodrich, M. D., Boothbay Harbor

Oxford

President, Thomas P. Nangle, M. D., West Paris
Secretary, Dexter E. Elsemore, M. D., Dixfield

Penobscot

President, Magnus F. Ridlon, M. D., Bangor
Secretary, Herbert C. Scribner, M. D., Bangor

Piscataquis

President, Albert M. Carde, M. D., Milo
Secretary, Francis W. Bradbury, M. D., Dover-Foxcroft

Somerset

President, Howard L. Reed, M. D., Skowhegan
Secretary, Albert J. Bernard, M. D., Skowhegan

Waldo

President, Seth H. Read, M. D., Belfast
Secretary, Raymond L. Torrey, M. D., Searsport

Washington

President, James C. Bates, M. D., Eastport
Secretary, Karl V. Larson, M. D., East Machias

York

President, Leandre R. Charest, M. D., Biddeford
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Cumberland

The 230th meeting of the Cumberland County Medical Society was held at the Mayfair Room of the Lafayette Hotel on April 1, 1954.

A social hour preceded dinner, following which the meeting was called to order by President O'Donnell. Fifty-nine members were present.

A committee report of interest was that of the special committee appointed by Dr. O'Donnell to investigate the problem of vaccination against polio. This committee, headed by Dr. Thomas Foster, recommended that the Cumberland County Medical Society vote its approval of the Polio Vaccine Field Trials as authorized by the National Foundation for Infantile Paralysis. After discussion, the committee report was accepted with the provision that single syringe technique be used in administering the vaccine.

Following the business meeting Dr. Franz J. Inglefinger, Associate Professor of Medicine at Boston University, spoke to the Society on the topic "Difficulty in Swallowing." Dr. Inglefinger's talk was extremely well done and was enthusiastically received.

STANLEY E. HERRICK, JR., M. D.,
Secretary.

Kennebec

A regular meeting of the Kennebec County Medical Association on March 18, 1954, at the Hotel Elmwood, Waterville, Maine, was preceded by dinner at 7.00 P. M., with thirty-three members present.

President Charles E. Towne called the meeting to order and minutes of the preceding meeting were read and approved.

The President called on the obituary committees for their report on the deaths of Dr. John Gerald Towne and Dr. William J. O'Connor.

John Gerald Towne, M. D.

Dr. John Gerald Towne's passing was deeply felt by all who knew him, but the memory of the man we all knew as a wonderful physician and friend will linger long in our hearts.

He was born in Waterville, May 26, 1876, and following his education in the Waterville schools, he entered Baltimore University School of Medicine, graduating in 1900. He established his private practice in Waterville, and was active in the former Elm City Hospital as its Chief of Staff. He was also on the staff of the Sisters' Hospital in Waterville. He served for five years on the State Board of Registration for Medicine. He was Kennebec County Medical Examiner from the World War I period until the middle 1940's.

He worked tirelessly in the medical department of the Maine National Guard. He enlisted as a private in 1908 and upon his retirement he was given the rank of brigadier general. In World War II he was assigned to duty with the Selective Service Board in Augusta.

Dr. Towne gave his time as unstintingly to the American Legion. He was the first commander of the George N. Bourque Post in Waterville. He was an early Department of Maine commander and was elected a national vice commander in 1926. About a year ago he was made a life member of Bourque-Lanigan Post.

He was active in his church, and he also served on the Board of Education in Waterville for many years. He was a member of numerous Masonic bodies as well as other organizations.

His life was devoted to the unselfish giving of himself. Whatever he did, he did well.

In view of Dr. John Towne's service to Maine medicine, and of the esteem in which his memory is held by the members of the medical profession of Kennebec County, Be It

Continued on page 134

MAINE CHAPTER
AMERICAN COLLEGE OF SURGEONS

Meeting

Saturday, June 12, 1954

Samoset Hotel, Rockland, Maine

(Day Preceding Maine Medical Association Meeting)

PROGRAM

10:00-12:00 A. M. Surgery of the Hand

Edward Hamlin, M. D., Chief of Hand Clinic, Massachusetts General Hospital

Gordon Johnson, M. D., Houlton, Maine

Lawrence Crane, M. D., Portland, Maine

2:00- 2:45 P. M. Indications for Splenectomy

Mario Stefanini, M. D., Director of Hematological Laboratory of the New England Medical Center Hospital, Boston

2:45- 3:30 P. M. Diagnosis and Treatment of Early Carcinoma of the Cervix
Carl Dunham, M. D., Portland, Maine

3:45- 4:30 P. M. Treatment of Acute Head Injuries
Carl Irwin, M. D., Bangor, Maine

Dinner Meeting with Edward Churchill, M. D., Professor of Surgery, Harvard University, as Guest Speaker.

All members of the Maine Medical Association are cordially invited.

EMERSON H. DRAKE, M. D.,
Portland, Maine,
Chairman,
Program Committee.

County Society Notes—Continued from page 132

Resolved that this expression of our sense of loss be entered in the records of the Kennebec County Medical Association, and a copy of this resolution sent to his family.

Respectfully submitted,

/s/ CLARENCE E. DORE, M. D.,
IRVING I. GOODOF, M. D.,
WILSON H. McWETHY, M. D.

William J. O'Connor, M. D.

RESOLVED—That the members of Kennebec County Medical Association desire to express their tribute to the memory of their late associate, William J. O'Connor, who died suddenly February 7, 1954.

Doctor O'Connor was born in Bangor, Maine, October 2, 1884, was educated in the public schools and graduated from Bangor High School. He graduated from Bowdoin College Medical School in 1912, interned at the Maine General Hospital in Portland and in 1913 established his private practice in Augusta, Maine, which he continued until his death. Doctor O'Connor was President of the Kennebec County Medical Association in 1931 and was Chief of Staff at the Augusta General Hospital from 1945 to 1949.

He will be missed by his associates, friends and patients. His jovial personality was an inspiration to all.

RESOLVED—That these resolutions be spread upon the records of the Kennebec County Medical Association and a copy thereof be sent to the family of the deceased.

/s/ ROLAND L. MCKAY, M. D.,
NORMAN B. MURPHY, M. D.,
ADOLPHE J. GINGRAS, M. D.

Jay R. Plimpton, M. D., of Augusta gave a short paper titled "Virus Diseases of the Eye."

There followed a panel discussion on Peptic Ulcer—Moderator—Dr. M. Tieche Shelton.

Panel Members—with subjects—as follows:

Dr. Frederic Champlin—"Medical Aspects of Duodenal Ulcer."

Dr. Moses Lubell—"X-ray Evaluation and Review of Recent Literature."

Dr. John Reynolds—"Surgical Aspects of Duodenal Ulcer."

Dr. George Farrell—"X-rays and Demonstrations of X-rays of Various Gastric Ulcers."

Dr. Arthur McQuillan—"Surgical Aspects of Gastric Ulcer."

Dr. Irving Goodof—"Pathology in Relation to Clinical Findings."

A question period followed these papers and everyone participated.

The meeting adjourned at 10:30 p. m.

Respectfully submitted,

/s/ M. TIECHE SHELTON, M. D.,
for DR. A. H. MORRELL.

A regular meeting of the Kennebec County Medical Association was held at the Augusta House, Augusta, Maine, February 18, 1954, with dinner at 7.00 P. M. served to thirty-three members and guests. A few members arrived later.

President Charles E. Towne called the business session to order; the record of the previous meeting was read and approved.

The application of Walter A. Russell, M. D., having passed the Council, was presented by the chair and he was duly elected to membership.

The chair then called on Dr. Mitchell who, for the committee, read the Resolutions on the deaths of Drs. Tyson and Odiorne, as follows:

Forrest C. Tyson, M. D.

Dr. Forrest C. Tyson died at his home in East Winthrop, December 25, 1953.

He was born in Adrian, Michigan, February 12, 1882; graduated from Tufts Medical School in 1905 and interned at the Massachusetts State Mental Hospital at Tewksbury.

Dr. Tyson was Assistant Superintendent of the Bangor State Hospital until 1913 when he became Superintendent of the Augusta State Hospital and continued as such until his retirement in 1946. Since then he has lived in the house he built near the Augusta Country Club golf course, which he loved.

He was a past president of the Augusta Rotary Club; past president of the New England Psychiatric Association and member of the Maine and Kennebec County Medical Associations.

Dr. Tyson was well known in Maine legal circles as an expert witness in cases involving mental illness and was frequently called to other New England States to testify in murder cases.

He was an ardent golfer and won the Maine open championship in 1926. Golf was his favorite avocation almost to the day of his death; Therefore be it

RESOLVED, That in the death of Dr. Tyson the profession has lost a member who was outstanding in his chosen field, and this Association an able and honored member; and be it

RESOLVED further, That a copy of these resolutions be spread on the records of this Association and copies sent to the members of the bereaved family.

Respectfully submitted,

/s/ ROSCOE L. MITCHELL, M. D.

James E. Odiorne, M. D.

Dr. James E. Odiorne died at his home in Coopers Mills on December 21, 1953.

Dr. Odiorne was born at Richmond, Maine, March 5, 1876. He was educated in Richmond schools, Ricker Classical Institute, Bowdoin College, and the Medical School of Maine, receiving his M. D. degree in 1901. He practiced at East Pittston, North Whitefield and East Jefferson for varying periods until 1922 when he moved to Coopers Mills where he was located at the time of his death.

Dr. Odiorne had a long record of public service including membership on the Pittston School Board, Medical Examiner of Lincoln County, Draft Board Member, Liberty Loan Committee in World War I, Medical Examiner of Selective Service Board, World War II and other responsible public positions.

He was a Mason, Knight Templar, and member of the Kora Temple, Mystic Shrine, and also a member and one time Grand Master of the Grand Lodge of Odd Fellows of Maine.

His practice covered a wide field in many of the surrounding towns when horses and snowmobile were the only means of travel to his patients to whom he was always available and to whom he gave his best; Therefore be it

RESOLVED, That in Dr. Odiorne's passing the communities where he lived and practiced have lost an able practitioner and a warm and sympathetic friend, and this Association one of its oldest, and for more than fifty years a highly respected member, and be it

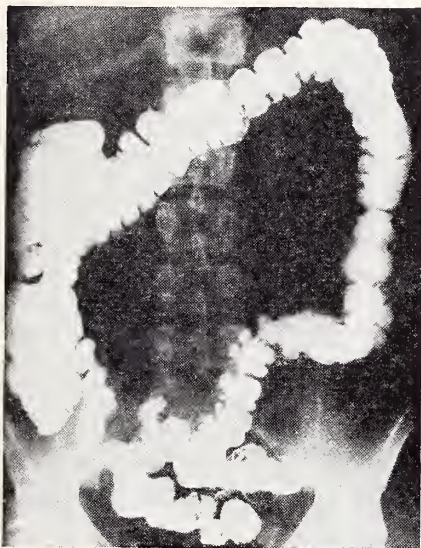
RESOLVED further, that a copy of these resolutions be filed in the records of the Association and copies be sent to the members of the bereaved family.

Respectfully submitted,

/s/ ROSCOE L. MITCHELL, M. D.

George E. Farrell, M. D., of Waterville, presented a brief, very interesting, introductory or initiatory, paper on his field—X-ray; newer knowledge of the use of colloidal barium, polyps of lower bowel—compared newer techniques with lipoidal.

Continued on page 136



Normal Colon



Ulcerative Colitis



Atonic Colon

Smoothage and Bulk in Correcting Constipation

*To initiate the normal defecation reflex,
the "smoothage" and bulk of Metamucil® provide
the needed gentle rectal distention.*

Once the habit of constipation has been established, due to any of a large number of causes, it becomes a major problem. Self-medication with irritant or chemical laxatives, or repeated enemas, usually causes a decreased, sluggish defecation reflex and may result in its complete loss.

Rectal distention is a vital factor in initiating the normal defecation reflex, and sufficient bulk is thus of obvious importance in restoring this reflex. Metamucil provides this bulk in the form of a smooth, nonirritating, soft, hydrophilic colloid which gently distends the rectum and initiates the desire to evacuate. Metamucil demands extra fluid, imparting even greater smoothage to the intestinal contents.

It is indicated in chronic constipation of various types—including distal colon stasis of the

"irritable colon" syndrome, the atonic colon following abdominal operations, repressions of defecation after anorectal surgery and in special conditions such as the management of a permanent ileostomy. Metamucil is the highly refined muciloid of *Plantago ovata* (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent.

The average adult dose is one rounded teaspoonful of Metamucil powder in a glass of cool water, milk or fruit juice, followed by an additional glass of fluid if indicated.

Metamucil is supplied in containers of 4, 8 and 16 ounces. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

County Society Notes—Continued from page 134

President Towne called on Lee W. Richards, Jr., who introduced R. Cannon Eley, M. D., of Boston, whose subject was "Infectious Diseases and their Prevention." He discussed the many phases of this subject; control of typhoid; measles and use of gamma globulin—prevent or modify; triple, Diphtheria, Tetanus and Pertussis; toxoid, discussed vaccination at length; German Measles—16 to 1 danger that woman have defective baby. Effectiveness of gamma globulin in combatting "polio" leaves much room for doubt—disease variable—difficult to know which cases would be paralytic—much more to be done before conclusions reached—diphth—tetanus, pertussis immunization recommended early as two months. He covered the whole subject matter in a rapid, thorough, detailed, masterly way, provoking numer-

ous questions with one of the best and most informative talks we have had on this field. After the questions, adjournment followed.

Respectfully submitted,

/s/ A. H. MORRELL, M. D.,
Secretary.

New Member

Somerset

Herbert J. Hopkins, M. D., North Anson, Maine.

BOOK REVIEWS

Salt and the Heart, E. T. Yorke, M. D., Drapkin Books, Rahway, N. J.

Now that the medical profession has finally accepted salt restriction as an important part of the treatment of congestive heart failure, many people have come to have a personal interest in the low sodium diet. As a result several low sodium cook books and a few excellent books regarding diets restricted in salt have appeared. Dr. Yorke's small volume is the latest of such books to be published.

The book begins with the experiences of an old sailor who is obliged to stay ashore because he has developed heart failure. He finds at once that he has not only lost his salty environment; his internal economy is also deprived of salt. The author uses the conversation of his cardiac patient to establish some of the points he wishes to make concerning salt restriction in the diet.

The book contains sections devoted to a discussion of heart failure, the role of sodium in edema, a description of our knowledge of salt conservation and elimination by the body. There is a chapter on the discovery and use of the Foxglove. Brief mention is made of salt restriction in the treatment of hypertension. The use and limitations of exchange resins is discussed.

The book has tables showing the sodium content of nearly all common foods and condiments. Although the author refers his readers to works on dietetics for help in preparing palatable low sodium diets, he includes in his book a recipe for saltless bread, the formula for a baking powder that contains no sodium, and methods for extracting a part of this element as it is naturally present in some foods. His formula for computing the sodium content of a meal is understandable.

The author's style is easy and the book in general is worthy of praise. Written by a physician, there are no glaring

errors in physiology; written for the public, the absence of medical terms is commendable.

EUGENE H. DRAKE, M. D.,
58 Deering St.,
Portland, Maine.

A Doctor Talks To Women, Samuel Raynor Meaker, M. D. Published by Simon and Schuster, 630 Fifth Avenue, Rockefeller Center, New York 20, N. Y., 1954, price \$3.95.

The preface by Dr. Meaker expresses the point of view of an experienced and considerate gynecologist.

This is a very clear presentation of most important information about which many false ideas are prevalent. There have been many books written on similar lines but many have been garbled and some tend to be more lurid than informative.

The first chapters should be very helpful giving basic anatomy and physiology.

The text on cancer is not alarming but stresses the real importance of early diagnosis.

There is a great need for the public to have sane advice and still not to be scared into hysteria and this Dr. Meaker has done well.

R. H.

Editor's Note:

The reviewer, Dr. Roderick L. Huntress, a one time student of Dr. Meaker's, told the editor that he enjoyed reading the book and that he had pleasant memories of Dr. Meaker as a teacher.

Books Received

The following books have been received in the office of THE JOURNAL OF THE MAINE MEDICAL ASSOCIATION, thanks to the kindness of the publishers and our review-writing members. A review of each of these publications will appear in an early issue of the JOURNAL and the book added to our medical library.

Music Therapy, edited by Edward Podolsky, M. D. —

Philosophical Library, 15 East 40th Street, New York 16, N. Y., 1954.

Thoughts About Life by Felix Friedberg — Philosophical Library, 15 East 40th Street, New York 16, N. Y., 1954.

Understanding the Japanese Mind by James Clark Moloney, M. D. — Philosophical Library, 15 East 40th Street, New York 16, N. Y., 1954.

TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

The Problem of Tuberculosis in Psychotics

By Abraham M. Balter, M. D., Michael Pilpel, M. D., Harold S. Hatch, M. D., and George N. J. Sommer, Jr., M. D., The American Review of Tuberculosis, November, 1953.

Case finding of active tuberculosis is at such a high level of efficiency in this country that it can well be asked why we allow a dangerous focus of tuberculosis infection to go inadequately explored and reluctantly treated.

This focus comprises the patients who are hospitalized in institutions for the mentally ill. The danger of exposure of psychotic patients to tubercle bacilli is serious and its importance to society is but dimly realized. It is near to absurdity to make great effort to find tuberculosis in the general population and to ignore it in the psychotics. The number of tuberculous patients varies with different institutions, but, on the whole, it is much higher than in the general population. Various theories are offered to account for this increased incidence; that the psychotic undergoes some kind of metabolic change in which a failure of resistance renders him an easy victim of the disease; that the psychosis causes a person to eat poorly, to become dilapidated, and to be careless of himself; or that he is in intimate contact with undiscovered cases of active tuberculosis. Probably all factors are active. Whatever the reason, the incidence of tuberculosis is greatest in those patients who have been hospitalized for five years or more.

When the psychotic is identified and placed in an institution, he is too often dismissed from mind. The psychotic himself has withdrawn from the world of reality and from acceptable human activity. But the phthisiologist may not withdraw from the vexatious reality presented by the tuberculous psychotic. Hopelessness has no place in the treatment of mental illness. Psychotics can and frequently do recover; and, having recovered, they are at a grievous disadvantage if they must be hospitalized for the tuberculosis which they acquired while under treatment for the psychoses.

Every form of diagnostic procedure should be carried out with psychotic patients. Whether it is sputum collection, extraction of gastric contents, roentgenograms of the chest, planigrams, fluoroscopy, or bronchoscopy, it can be done. Free use of sedation may be employed successfully with any diagnostic procedure. The patient must never be allowed to order his own regimen by defeating the efforts of his physician.

There are no statistics regarding the difference in infectiousness between the psychotic tuberculous patients and the nonpsychotic. The impression, however, is that the former are more infectious because many are dilapidated; and to discover them is both difficult and time consuming. Tuberculosis can make great advances between yearly roentgenograms.

Our impression of the course of tuberculosis in the mentally ill cannot as yet be reinforced by statistical data. There has been an impression, however, that tuberculosis in the mentally ill is more indolent, less responsive to treatment, and it is more prone to relapse. Whether this would be true if tuberculous psychotics could be treated under ideal conditions, is uncertain; but our results indicate that the course of tuberculosis in the mentally ill relates directly to the care and attention given to prevention and treatment.

The history of illness given by a psychotic may be surprisingly accurate, or it may be misleading, irrelevant, and absurd; or there may be no history at all. Diagnosis must often depend on factors other than the history. The physician must maintain a high "index of suspicion" for the disease, and all personnel must be thoroughly indoctrinated to watch for changes of attitude and behavior in patients. If the physician is alert to the valuable information brought to

him by nurses, aides, and others who come in contact with patients, he will be quick to order the roentgenogram. Diagnostic methods should then be followed as closely as with nonpsychotics. The patient may not be cooperative but, with persuasion, gentle handling, and with proper sedation and timing, the desired film can be obtained. Patients vary in their mood, and there are frequent intervals when they are cooperative. Refusal to eat is a frequent occurrence among psychotics. The resulting loss of weight should be a warning signal to the physician.

The problems presented in the treatment of tuberculous psychotics resemble those of diagnosis, but the difficulties are greater. The patterns of treatment for the psychotic must be the same as those for the nonpsychotic.

Rest is still the basis of treatment. Great care is taken to teach all patients the rest regimen, although many patients require longer and more persistent training. Among these will be a minimum who will break treatment no matter how carefully taught and how closely watched. How large this irreducible minimum is, will vary with the tolerance of the personnel to breaks in treatment. An energetic, well-trained, and careful group will have only a small number of uncooperative patients.

It is reasonable to ask what may be done with a patient who is overactive, resistive, assaultive, and not amenable to persuasion, but who has far advanced tuberculosis with a sputum rich in tubercle bacilli. Treatment then becomes a joint matter between the phthisiologist and the psychiatrist. Shock therapy and lobotomy may be in order and, if so, can be carried out as with the nontuberculous psychotics. These are instances where the psychosis is the disease of greatest urgency, but, when the patient becomes more amenable to the hospital regimen, tuberculosis once again becomes the more important problem. These patients require much more care and attention than either the nonpsychotic tuberculous or the nontuberculous psychotic.

Where the indications are good, a combination of surgical procedures with antimicrobial therapy is the method of choice. Thoracoplasty, lobectomy, segmental and wedge resections are carried out exactly as with nonpsychotics.

In addition, a great deal may be expected from extensive employment of streptomycin with para-aminosalicylic acid or with isoniazid. Minimal and moderately advanced cases show a surprising response and the more advanced cases may be improved to a degree where surgical procedures become possible. Patient cooperation can be a problem in antimicrobial therapy. Ordinarily, para-aminosalicylic acid or isoniazid by mouth and the injection of streptomycin are accepted by psychotics with as little resistance as by nonpsychotics. Sometimes much persuasion is necessary, and occasionally a patient must be held while he receives his injection, and the oral medication must be given in soluble form mixed with food. With a stable group of patients who may not leave the hospital at will, it is possible to apply all methods of treatment as they are indicated.

Originally, our efforts began with systematic case finding and continuous re-examination of our tuberculous patients, both active and inactive, and regular follow-up of all personnel. Patients were systematically trained to follow the rest regimen; collapse therapy was employed whenever indicated. The current regimen of streptomycin combined with para-aminosalicylic acid and isoniazid, has given gratifying results. With vigorous application of all methods of therapy the whole patient, with his tuberculosis and psychosis, can be treated successfully and tuberculosis in a neuropsychiatric institution can be controlled.

(The printing of Tuberculosis Abstracts is made possible by the cooperation of your local tuberculosis and health association.)

* From Vol. XXVII, May, 1954, No. 5.

NOTICES

Radio Network Will Carry AMA Inaugural Ceremony

For the fifth consecutive year the installation of a new President of the American Medical Association will be broadcast nationwide by radio on Tuesday night, June 22, from the 103rd Annual Meeting in San Francisco.

Approximately 340 stations of the American Broadcasting Company radio network will carry the half-hour inaugural ceremony at which Dr. Walter B. Martin of Norfolk, Va., will become the Association's 108th President. The program, originating from the Gold Ballroom of the Palace Hotel, will be heard at 7.30 p. m., Pacific Coast Daylight Time (10.30 p. m. Eastern Daylight Time).

For the first time the ceremony this year also will be televised locally. Station KGO-TV will carry the program to television viewers in the San Francisco area at the same time as the radio broadcast.

Dr. Martin, in his inaugural address after taking the oath of office, will deliver a timely report on medical progress. Also taking part in the ceremony will be Dr. Edward J. McCormick, retiring AMA President; Dr. Dwight H. Murray, Chairman of the Board of Trustees, and Dr. James R. Reuling, Speaker of the House of Delegates.

All physicians who will not be in San Francisco for the AMA meeting are urged to watch the radio listings in local newspapers for any local variations in the broadcast time of the ABC program.

AMA Surveys Hospital Service in U. S.

Hospitals set a new record during 1953 with 19,869,061 patient admissions as compared with 18,914,847 in 1952, according to the 33rd annual report on hospital services in the United States prepared by the AMA's Council on Medical Education and Hospitals.

This report, appearing in the *Journal of the AMA*, May 15, shows a continued increase in the volume of hospital services in the country. For the second time in history, the number of hospital births exceeded the three million mark—3,307,182 in 1953 as compared with 3,170,495 in 1952. This represents approximately 84% of the estimated 3,910,000 annual births in the United States.

Other highlights of the report:

6,840 hospitals registered by AMA—2,136 classified as governmental and 4,704 as nongovernmental.

Gains in patient admissions noted in both groups but more pronounced in the nongovernmental division credited with 74% of all admissions.

Bed capacity in registered hospitals increased by 31,399 over the previous year with a total of 1,573,014—1,113,004 in governmental and 460,010 in nongovernmental hospitals.

Average length of stay per patient was reduced in general hospitals from 9.8 to 9.3 days. Also included in this group are federal general hospitals which showed a reduction from 26.2 to 23.6 days.

In addition, many registered hospitals are supporting educational activities connected with training of interns, residents, student nurses, technical and other hospital personnel. 850 hospitals approved for internships; 1,146 for residencies, and 1,071 for professional nursing education.

American Geriatrics Society 1954 Annual Meeting

The 11th Annual Meeting of the American Geriatrics Society will be held at the Fairmont Hotel in San Francisco just preceding the meeting of the American Medical Association. The scientific sessions of the meeting will begin Thurs-

day afternoon, June 17, and continue through Saturday morning, June 19.

Hotel reservations should be made through the San Francisco Convention and Visitors Bureau, 200 Civic Auditorium, San Francisco 2, California. Members should reserve accommodations immediately, stating time of arrival and departure date, because the hotels expect to be filled to capacity.

The Annual Business Meeting will be held in the Fairmont Hotel, Thursday morning, June 17, at 9 o'clock. All Scientific Sessions will be held in the Nob Hill Room of the Fairmont, and the annual dinner is scheduled for the Terrace Room on Friday evening, June 18.

The meeting will be open to all members of the American Geriatrics Society and to physicians and other scientists who are interested in the field of geriatrics. The program will cover many aspects of geriatric medicine, and there will be several panel discussions on such subjects as recent developments in cardiology, methods of determining operability in older patients and the relation of industry to geriatrics. Outstanding clinicians and investigators will participate.

Dr. Laurance W. Kinsell, Highland Alameda County Hospital, 2701 Fourteenth Avenue, Oakland 6, California, is in charge of local arrangements for the meeting.

W. O. THOMPSON, M. D.,
President,
700 North Michigan Avenue,
Chicago 11, Illinois.

American Proctologic Society 1954 Annual Meeting

The American Proctologic Society will hold its Fifty-third Annual Meeting at the Hotel Statler in Los Angeles on 2 to 5 June, 1954.

In addition to members of the Society, papers will be presented by Dr. Edgar J. Poth, Professor of Surgery at the University of Texas; Dr. Philip B. Price, Professor of Surgery at the University of Utah; Dr. William H. Muller, Jr., Associate Professor of Surgery, University of California; and Dr. Alton Ochsner, Professor of Surgery, Tulane University.

Physicians desiring to attend the meeting should communicate with the Secretary, Dr. Stuart T. Ross, 131 Fulton Avenue, Hempstead, New York.

Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.

Augusta General Hospital, Augusta, Maine, 1st Monday, 9.00 A. M., Leon D. Herring, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Ross W. Green, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

**Department of Health and Welfare
Division of Maternal and Child Health
(Including Services for Crippled Children)
Clinic Schedule — January Through June, 1954**

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: Jan. 11, Feb. 8, Mar. 8, Apr. 12, May 10, June 14.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: Jan. 15, Feb. 19, Mar. 19, Apr. 16, May 21, June 18.

Rumford — Community Hospital, 1.30-3.00 p. m.: Mar. 17, June 16.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Feb. 25, June 24.

Rockland — Knox County Hospital, 1.30-3.00 p. m.: Feb. 18, May 20.

Machias — Normal School, 1.30-3.00 p. m.: Feb. 10, Apr. 14.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.: 1.00-3.00 p. m.: Jan. 12, Mar. 10, May 11.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: Mar. 9.

Fort Kent — Peoples Benevolent Hospital, 10.00 a. m.-1.00 p. m.: Jan. 13, May 12.

**Bangor* — Eastern Maine General Hospital, 1.30-3.00 p. m.: Jan. 28, Mar. 25, May 27.

**Augusta* — Augusta General Hospital, 1.00-3.00 p. m.: Apr. 22.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

**Bangor* — Eastern Maine General Hospital, 9.00-11.00 a. m.: Jan. 29, Feb. 26, Mar. 26, Apr. 23, May 28, June 25.

CLEFT PALATE EVALUATION CLINICS

Portland — City Dispensary, India Street, 10.00 a. m.: Feb. 9, May 11.

PEDIATRIC CLINICS

**Bangor* — Eastern Maine General Hospital, 1.30 p. m.: Jan. 29, Feb. 26, Mar. 26, Apr. 23, May 28, June 25.

**Waterville* — Thayer Hospital, 1.30 p. m.: Jan. 5, Feb. 2, Mar. 2, Apr. 6, May 4, June 1.

**Presque Isle* — Northern Maine Sanatorium, 1.30 p. m.: Jan. 27, Mar. 24, May 26.

* Several of the Pediatric Clinics, and also Bangor CC Clinics, will be two-session clinics.

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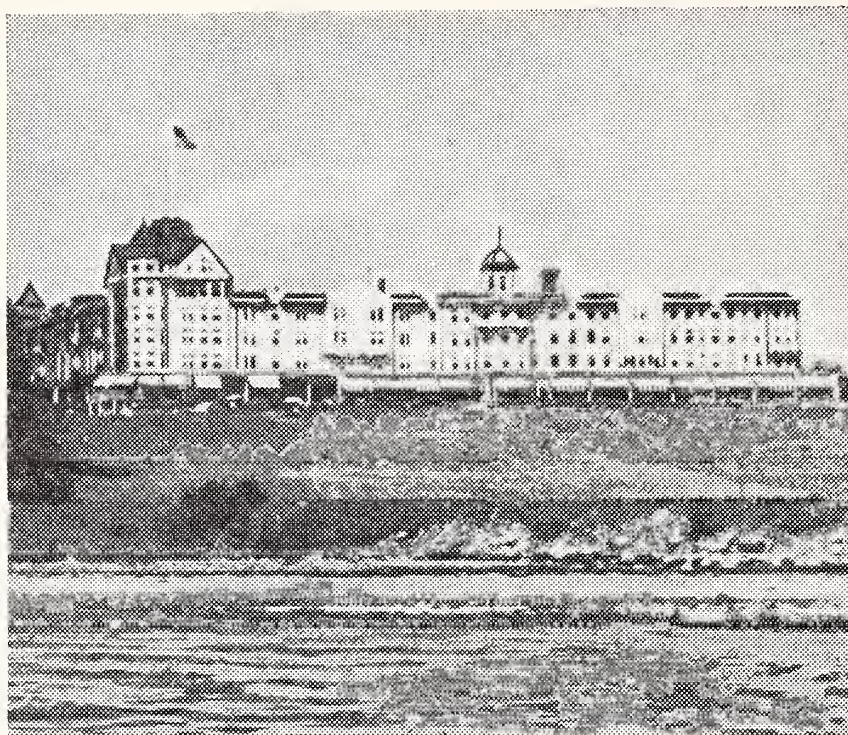
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RESPIRATORY OBSTRUCTION IN INFANCY*

JAMES L. WILSON, M. D.** Ann Arbor, Michigan

I want to thank you for the opportunity to be here today. I have spent many years in Maine and I love it. I am really filled with a little bit of homesickness by coming back here even though I did not live in Portland. Only those of you who were brought up in New England—I was actually born in New Hampshire and not in Maine—and have gone off to live in other places, will appreciate what it means to come back. I usually manage to come back to New Hampshire for a month each year. That, however, is not enough time to come back to this most lovely part of the United States.

I would like to talk about the chronic types of respiratory obstruction in infancy that are presumably congenital, and the very common problems which make their appearance rather early in life. I shall not mention such problems as foreign bodies in the lungs, or other acute problems.

Now, I am very bold in discussing these conditions because they are very complex, and in spite of the fact that they are very common, they present some of the most puzzling situations that we have to meet as practitioners.

We are apt to cover up our ignorance in medicine, as in many other fields, by the contented use of certain accepted terms. We use certain diagnostic terms

with the idea that that makes us understand what we are talking about, whereas actually we do not. In our ignorance we can do an enormous lot of harm in the conditions I am discussing because the vast majority of newborn babies with signs of respiratory obstruction get along very well without medical assistance.

My father, who was a Baptist minister in Maine, used to quote the Bible. "The fear of the Lord is the beginning of wisdom." We might change that a bit and say that the beginning of wisdom is by the definition of ignorance, and today I am going to try to define our ignorance in this field.

Let us consider the children who soon after birth begin to breathe with inspiratory obstruction. One group of these babies who make a lot of noise on inspiration, and sometimes crow, do very well. They eat well, gain weight, and if you were deaf you wouldn't worry about them because they may get along splendidly. The noise they make is worse when they are relaxed and it is still worse when they are asleep. Often it is strikingly evident that when they get angry and cry, their inspiratory effort is unobstructed. The cause of the difficulty in most of these babies, I believe, is due to soft tissues obstructing the upper respiratory tract when they are at rest. In some of these babies you will find quite striking evidence of general hypertonia. These conditions are included under the term "congenital laryngeal stridor."

Now, we have another group, and let me empha-

* Presented at M. M. A. Centennial Session, Portland, Maine, June, 1953.

** Professor of Pediatrics and Communicable Diseases, University of Michigan Medical School.

size that the groups overlap, where the babies suffer more obstructive dyspnea when they are excited and may be nearly free of noisy breathing when they are asleep. They are apt to be irritable because they swallow a lot of air which gives them colic. That makes them cry so they swallow more air which gives them more colic, and so on, in a vicious cycle. The more irritable they are, the more inspiratory obstruction they have, but they are apt to have a little trouble when they are relaxed. In this group we find a much higher percentage of babies with brain damage and it is very characteristic of some defective babies that they have a great deal more difficulty on inspiration when awake and during stimulus. Do not conclude, however, that a baby who goes into laryngeal or respiratory spasm when he is crying has brain damage because it is by no means true that all babies with this difficulty are so damaged.

Now we have a third group where the babies begin to show more episodic periods of respiratory difficulty, which seems to be initiated by swallowing and in attempts to feed. They sometimes become great emergencies, and in the extreme case may nearly die when attempts are made to feed them. They may start feeding with considerable evidence of appetite, which we are glad to see, and demonstrate a good suck reflex. They take a few swallows, but then begin to choke. Amongst these babies is a small group with tracheoesophageal fistula. That condition is usually associated with esophageal stenosis. It is not extremely uncommon and it is an easy diagnosis to make, although the diagnosis is sometimes delayed without good justification. Without esophageal stenosis, the probability of a tracheoesophageal fistula is rare indeed, but must be considered.

Another condition which causes similar symptoms and which we should all know about, is one in which the epiglottis is abnormal. It is twisted and crooked, and in swallowing does not precisely and accurately cover up the glottis so that a little bit of food is aspirated in swallowing. This can only be surely diagnosed by a very careful and skillful inspection by laryngoscopy. When it is recognized, it is important to know that it has an excellent prognosis. Greater than usual care in feeding techniques must be used. The hole in the nipple should be just right for this particular baby, but a good, understanding, calm, and patient nurse will solve the problem for us. This condition corrects itself and nothing should or can be done about it. It is of great importance to recognize it, obviously, and the parents can be given an excellent prognosis, as is true in the first group.

I want to particularly emphasize another group of infants who have greatest difficulty with laryngeal obstruction, often apparently initiated by the act of sucking or swallowing. These patients are not clearly defined in our textbooks or well described in our

journals. For some reason these babies have a reflex originating somewhere in the respiratory tract which causes laryngeal spasms and other symptoms which approach convulsions. These babies also occasionally suffer apparently from a vagus stimulus with marked slowing or stopping of the heart. This type of mechanism is not well understood certainly by me, or I doubt by anyone, very clearly, and no two cases that I have encountered have been exactly alike. One of my old teachers in Boston used to tell us about an adult patient whose heart stopped momentarily whenever he turned his head sharply in a certain direction. He had a fibrotic scar in the mediastinum which, under certain circumstances, would initiate an abnormal vagus stimulus. Some of these children have had operations for tracheoesophageal fistula and undoubtedly some "reflexogenic" area is present which is stimulated by traction of scar tissue.

Now, in considering neurological explanations for inspiratory obstruction, often of an episodic nature, we think of temper tantrums or of an "epileptic equivalent." There are many variations of temper tantrums but we encounter them seldom in little babies, or at least we cannot dependably diagnose them. In temper tantrums with "breath holding" spells, children begin to cry and then suddenly seem to lose control of respiration and apparently suffer laryngeal spasm, become blue and only finally, with loss of consciousness, relax and breathe again. We sometimes can take this lightly enough when we watch them ourselves but we can get just as frightened as the mother. Now, this condition overlaps what we have come to call the epileptic equivalent, a dangerous term to use carelessly I know. In some of these patients that I am discussing we seem to be dealing with an episodic discharge from the brain which ends in spasm of such a nature and such a degree that deep cyanosis follows, and unconsciousness, the initiation of which is hard to define. Sometimes there is definite twitching which we will identify as the traditional type of convulsion. So now, are we dealing with anoxemia, causing the convulsion, or the convulsion causing the anoxemia? In many individual cases we simply cannot tell.

I must relate a case history or two for you and I will try to be brief. I started this talk with a high moral note, emphasizing that a physician could do much harm, and this first case is a horrible illustration. I can assure you that the Pediatric Department of the University of Michigan of which I am chairman, may not be any wiser than anybody else. This infant came to us from another hospital and stayed with us for seven months. In that time the baby had four laryngoscopies, two bronchoscopies, one esophagoscopy, one tracheogram, and also an angiocardio-gram. He was also subjected to a major operation in which an abnormality of the great vessels around the trachea was discovered and corrected. The child is

now well, but in retrospect none of these procedures was necessary. This baby had severe inspiratory obstruction, not constantly but repeatedly, clearly initiated by swallowing. In worrying about these things, of course, we did the routine things. We took X-rays which showed something a little abnormal in the mediastinum and that led us to do the angiocardigram. A vascular ring was discovered and although he did not have the symptoms of esophageal obstruction, it led us in desperation to correct this by surgery. The operation was successful and it didn't kill the patient, but it didn't correct the obstructive respiration on feeding. Incidentally, he developed aspiration pneumonia a couple of times, as you might have suspected. Finally, the convulsive basis of this child's symptoms became clearer and we began to use anticonvulsive agents which were immediately completely successful, and the baby never had another episode. Whatever happened here does not show, I am sure, that this baby had simple epilepsy. If we will accept the concept that epilepsy is a response to an abnormal discharge from the brain, then perhaps it can be said that this baby had epilepsy with a trigger mechanism. However, we do not ordinarily think of epilepsy in that way, with a trigger mechanism outside the brain.

We have a series of cases, no two of which are quite alike but present something like the same general neurological problem. For instance, one little baby, very young, came in having had what was called "spasms" and almost producing its death every time it was fed. True enough, when we tried to feed it, it seemed to have respiratory obstruction, very marked, although, as we watched the baby, we could not be sure that it was not in a convulsion. Sometimes it did seem to be in a convulsion and did not get blue. However, with the first or second attack things were so bad that a tracheotomy was immediately done as emergency treatment. It was immediately successful. After the tracheotomy, as we fed the baby a spasm would again occur, apparently of the larynx, but with the tracheotomy, respirations were successful. The baby apparently had a convulsion. Whenever we plugged the tracheotomy tube, and then fed the baby, he would go into laryngeal spasm, become extremely dyspneic and not breathe at all successfully for two or three minutes. It became gradually clear to us that this was another of the babies that have some kind of abnormal reflex, this being triggered by feeding. This baby greatly improved on large doses of atropine and in a few months seemed alright, and the tracheotomy tube was finally taken out. There was never any demonstrated obstruction to the upper respiratory tract. In other words, the traditional indications for a tracheotomy were not present, and yet I feel that it saved a life.

How are we going to handle these complex situations? It seems to me that every physician, as I,

would like to be handed a series of one, two, or three directions as to what to do, but I think that it is folly to think that any simple rule can be followed. We must analyze each case, and cannot list X-ray, fluoroscopy, swallowing of barium, electroencephalogram, etc., as rigid routines that should be carried out with each baby with success. The simplest thing which any one of you could do, even in a baby in good health, would be to take an X-ray of the chest. I should like to take a half hour to talk about X-rays of the baby's chest. It can be a dangerous procedure, not because it itself does the baby any harm, but because the doctor is apt to see something there that is going to mislead him unless he is very experienced with babies' chests, and this is as true for the roentgenologist as for the pediatrician. Any physician should discipline himself by studying a series of healthy babies, under the fluoroscope and by X-rays, chosen because they are healthy and not because they have some symptoms. The thymus is normally large in many babies. The X-ray doesn't tell you how thick it is. It tells you how wide it is. It changes shape remarkably in different phases of respiration. There may be 200% or 300% difference in the mediastinal shadow, all within a moment or two, where you succeed in making exposures at full inspiration and expiration. The technique is difficult and it requires patience. It also requires an X-ray machine so that rapid pictures can be taken. So, we should start with the X-ray, but with the most critical evaluation of it, and you should put no trust in it if it is not taken on good inspiration or nearly full expiration. The barium swallow is extremely valuable, but again it is only valuable to the physician who is experienced.

Thus, in our limited experience we begin to see a pattern of conditions where we have episodic respiratory obstruction initiated by swallowing, with sometimes a clear convulsive component to the episode. We have two ways of treating the conditions, one with the use of antispasmodics, like atropine, to prevent laryngeal spasm, if that is what it is, or to inhibit the original reflex that produces the spasm. The other method is the use of anticonvulsant drugs as it is apparent that these babies are having convulsions, not spontaneously originating from the brain but initiated from some reflex or trigger mechanism.

Let me leave this confusing subject with an attempt at recapitulation, emphasizing the point that the vast majority of babies who have chronic inspiratory difficulty from birth are alright if left alone. There is little that you need to do about them that is good, and there is a lot that may be very harmful. Most of them will get better all by themselves within a year in the process of growth and development as that luckily results in an increase of the relative diameter of all parts of the respiratory tract as compared to the body as a whole. We have good ground for saying that the baby will outgrow his trouble.

However, among the large group of babies that get along benignly, there is a small group, often dramatically different, that can die. Amongst this group there are a few children with abnormal reflex centers

to which feeding can become a stimulus that will result in dramatic, dangerous, and sometimes fatal cardiac or respiratory failure, not due to anatomical deformities in the upper respiratory tract.

GASTROSCOPIC OBSERVATIONS IN A CASE OF RETICULUM CELL SARCOMA OF STOMACH

DONALD H. DANIELS, M. D., Portland, Maine

Sarcomas comprise about 1% of malignant gastric tumors and their comparative rarity establishes a more important need for the recording of their clinical and endoscopic characteristics, than is the case with the more common gastric lesions. Palmer's textbook on Gastroscopy¹ has indicated that there are no well known criteria for diagnosing these tumors by the endoscopic method and advises recording of gastroscopic information in every case (for future review in describing the characteristics in such tumors, which may be more useful in diagnosis). This book further states that the gastroscopic picture of reticulum cell sarcoma has been recorded for only one patient.

The following case report of reticulum cell sarcoma of the stomach is described in furtherance of this recommendation, since the gastroscopic findings were not of any well established pattern and the true diagnosis was not known till pathological examination of the operative specimen was done, although the lesion was felt to represent a malignant tumor, probably carcinoma.

This 51-year-old white female was first seen because of the development of anorexia, mild dysphagia referable to lower esophagus, and a sense of fullness in sub-xiphoid area. Later there were noticed other symptoms of soreness and dull pains across chest wall at xiphoid level, and "terrific gas" (belching) and dull ache below the scapulae. She denied any previous episodes of digestive disorder. These various manifestations had been present for 3-4 weeks when first seen. Physical examination gave no further positive findings. X-ray studies of the upper G-I tract, gall bladder, and plain film of abdomen were all reported as negative. Shortly after this, a fractional gastric analysis revealed a complete achlorhydria, persisting after histamine stimulation, and an unusual character to the fasting specimen which was a thin grayish fluid with a turbid appearance and foul, necrotic-like odor. This suggested the presence of an atrophic gastritis as a part or perhaps the full cause of her complaints. Repeat X-ray examinations of the chest, upper G-I tract, and colon were made a month later and again all were reported as negative. Gastroscopic examination was then carried out, with findings as described below.

GASTROSCOPIC FINDINGS

"Preliminary drainage of stomach yielded one ounce of a foul smelling, thin brownish secretion with some small particles of mucus; then the stomach was irrigated with warm water for better preparation. Gastroscope passed easily, the angulus was identified, and the antral cavity became visible. The first abnormality seen was a thickened and irregular margin of the angulus with areas of reddening and adherent mucus masses giving the suspicion of a malignant tumor process. The distal side of the angulus could be seen in part as a continuation of thickened, irregular edge just described. At this same level and on the posterior wall was seen another rounded mass of mucus, about 1 cm. in diameter, and surrounded by a reddened base so that the impression was gained that this was a coating or slough covering some lesion underneath. Upon withdrawing instrument to upper end of stomach another large nodular, dirty brownish area was seen in lesser curvature position near esophago-gastric junction. This area was rather extensive and seemed to cover an estimated $\frac{1}{3}$ of the circumference of the stomach and resembled the appearance of a malignant tumor growth with a slough over the whole area and gave the impression it had originated in the submucosal tissues (or not as a surface tumor). Interpretation: The lesions described, particularly the large area at upper lesser curvature must mean organic disease, although the endoscopic appearance is not sufficient to permit specific diagnosis. It is felt the lesions are of malignant nature, probably carcinoma. It would appear as if considerable part of lesser curvature is involved, and the foul smelling gastric secretion is very suggestive of a necrotic lesion."

This gastroscopic examination was repeated a few days later with the following findings:

"Preliminary gastric lavage was done after an ounce of the same thin, foul odored, light brown secretion was obtained on drainage. Gastroscope passed without trouble and the angulus was observed again to exhibit a diffuse, nodular, thickened character to its margin, and its proximal wall with irregular adherent yellowish-white masses of mucus over its surface, and surrounding this were swollen mucosal

folks which were not characteristic of rugae but appeared as part of the whole abnormal change. At this same level, there was seen again the same circular patch of mucus 1 cm. in diameter, appearing to overlay a lesion but not permitting visualization of its nature. The antrum was seen more clearly on this examination and on the floor, or greater curvature, a moderate sized area of atrophic gastritis, well advanced was seen, and in general, a feature of the gastric mucosa as a whole was its smoothness and lack of rugae which would seem to be evidence of a generalized atrophic gastritis. At the cardiac end of stomach, the same large mass of dirty yellow brown tissue was seen as previously noted on greater curvature, anterior wall aspect, and as the lesser curvature area was approached, a necrotic appearing area of grayish black hue, diffusely spread and of irregular surface contour was seen. There was a central portion of lighter or whitish tissue suggesting a central infiltration. This was just below the cardia. Interpretation: Large area in upper part of stomach, anterior wall and lesser curvature which is strongly suggestive of an infiltrative diffuse carcinoma. There also is a general atrophic gastritis."

In view of the negative G-I X-ray examination at this time, surgery was deferred temporarily and a third G-I series was done after a short interval and at this time, evidence of tumor was found involving the esophago-gastric junction and the upper third of the lesser curvature with stiffening and obliteration of the mucosal pattern. It was interpreted as carcinoma of the fundus of stomach probably invading the lower end of esophagus.

OPERATION AND PATHOLOGICAL REPORT

Following this, transthoracic subtotal gastric resection was done and the tumor was found to invade

or involve the proximal half of stomach and lower inch of esophagus. Liver was free of metastases and tumor was found to arise predominantly from lesser curvature. Pathological examination of the surgical specimen revealed a tumor growth which was ulcerative in character and appeared to lie along the lesser curvature with extension to greater curvature. Two of nine lymph nodes adjacent to lesser curvature appear involved by tumor. Microscopic study revealed that the stomach wall was invaded by a pleomorphic tumor with cells being round and growing in cords. The nuclei were frequently lobulated and there were occasional cells with a relatively large nucleus. No evidence of lumen formation. Tumor appears to have stimulated fibrous tissue. Mucosa appears to be invaded by tumor rather than tumor arising from the gastric mucosal epithelium. Diagnosis: Reticulum Cell Sarcoma.

This patient had a prolonged post-operative course and did not seem to gain any. A course of deep X-ray therapy was given but she died 5 months after the gastrectomy, and about 10 months after onset of initial symptoms. The significant gastroscopic findings seemed to be the diffuse involvement of lesser curvature without any borders or margins around the tumor, the striking brown-black color changes wherein none of the usual orange red mucosal appearance could be seen except in lower stomach and greater curvature, the stiffness and irregularity of the angulus with adherent mounds of mucus, and the generalized atrophic gastritis with the peculiar isolated mounds of mucus surrounded by a reddened base and seeming to have no logical connection to the tumor but persisting in two examinations. It is perhaps more likely that these latter were part of the gastritis.

1. Stomach Disease as Diagnosed by Gastroscopy, E. D. Palmer, M. D., 1949 Edition.

Radio Series Deals With Superstitions

To show how certain old wives' tales—like the one about fish being "a brain food"—can sometimes lead us far astray and other times to actual cures for disease, the AMA's Bureau of Health Education has prepared a new radio transcription series entitled, "Superstition . . . or Science." This 13-program series will be available April 1 for broadcasting over local radio stations under the auspices of state and county medical societies.

Here is a brief rundown on some of the subjects covered in this interesting series: (1) Magic Touch—deals with such ancient notions as mad stones; (2) Nutrition Fallacies—reveals the facts regarding com-

mon foods as based on scientific investigations; (3) Quinine—shows how the use of crude cinchona bark by certain Indians led to the development of quinine; (4) Electricity and Magnetism—compares hypnotism employed by quacks and modern medical use of electronics and X-ray; (5) Cancer; (6) Goiter; (7) Anesthesia—traces the development of modern anesthesia from the days when patients were clubbed over the head with a mallet; (8) Wounds—draws comparison between old-fashioned methods of curbing infection and modern treatments; (9) Digitalis; (10) Fertility; (11) Scurvy; (12) Ephedrine, and (13) Tonics and Home Remedies.

ARTERY BANK*

RUSSELL G. WILLIAMSON, M. D.**

Arteries have been preserved and successfully grafted since 1908 when Carrel removed dog's arteries under aseptic precautions and preserved them in Locke's solution at 0° C. for from 1 to 35 days.¹ However, practical reliable methods of preserving arteries were not developed until very recently.

Gross, Bill, and Pierce² reported a method of preservation of dog and human aortas in a balanced salt solution with 10 per cent homologous serum, antibiotics, buffer and a pH indicator. These vessels were removed under aseptic conditions, placed in sterile flasks containing this solution and stored at 1°-4° C. for periods up to six weeks. These were viable grafts from which tissue cultures could be obtained in most instances. The first human artery bank was established at the Children's Hospital in Boston utilizing this method. Arteries preserved in this manner were successfully grafted in nine patients. The complete technical details of the maintenance of an artery bank using this technique were described by Cooke et al.³ and Keefer et al.⁴

Meeker and Gross⁵ later described a freeze-irradiation method of preserving unsterile arteries and irradiating them to procure sterility. Arteries were removed under septic conditions, stored in a carbon dioxide refrigerator and irradiated under a high voltage cathode ray tube. After sterilization, these arteries were again stored in a carbon dioxide refrigerator. This method has been widely adapted and successfully used in several Boston hospitals.^{6, 7}

Pierce, Rheinlander, Moritz, Gross and Merrill⁸ evaluated a method of preservation and sterilization of dog's arteries in neutral 4 per cent formalin. These vessels were washed in a balanced salt solution prior to implantation and after grafting, these vessels remained patent for periods up to nine months. These grafts showed the characteristic degenerative changes of arteriosclerosis, that is medial calcification and fragmentation of the elastic layers.⁹ The calcification was demonstrable five months post-operatively but in no way interfered with the patency of the grafts during the period of observation.

Marrangoni and Cecchini¹⁰ described a successful method of freeze-drying preservation of arteries in dogs. Vessels were removed under sterile precautions; frozen; dried at -15° to -25° C. in a vacuum for 72 to 96 hours, and stored in sealed jars at room temperature. Femoral artery and aortic grafts were successfully used in dogs after preservation by this

method. This method of preservation of arteries has been successfully used in humans also.¹¹ One of the limitations of this method was in the procurement of arteries. Vessels must be removed from refrigerated bodies with a negative serology and no evidence of infection or malignancy within 24 hours of death under carefully controlled sterile technique.

Rapid freezing at -72° C. and storage at this temperature was originally reported as inadequate and anastomotic disruption was a very common complication when these vessels were grafted into dogs.¹² Subsequently Deterling, Coleman and Parshley¹³ reported the successful use of this method in dogs. They rapidly froze sterile arteries in a 50 per cent carbon dioxide-alcohol mixture and stored them in a carbon dioxide refrigerator. Hufnagel and Eastcott¹⁴ reported equal success with both this method and rapid freezing in liquid nitrogen at -192° C. for 15 seconds with subsequent storage in a dry ice refrigerator. The first human frozen artery bank was established at St. Mary's Hospital, London,¹⁵ using the technique of Hufnagel and Eastcott.

Having reviewed the various methods by which arteries may be preserved it appeared that any of three methods would be applicable at this hospital. These were the balanced salt solution, the rapid freeze and the freeze-irradiation methods. The balanced salt solution method while basically simple had three distinct disadvantages. The vessels must be removed under very rigid aseptic techniques; they must be preserved in a carefully prepared and rather elaborate solution, and lastly they must be discarded if not used within six weeks. The rapid-freeze method while probably the simplest of all in principle, also required rigid aseptic technique during the removal of vessels and consequently careful bacteriological studies were required prior to the use of a vessel. Consequently the third method of freeze-irradiation seemed best suited for our facilities.

The threefold advantages of the freeze-irradiation method are that the arteries can be removed at autopsy without sterile technique. Our proximity to the Massachusetts Institute of Technology and the willing coöperation of Mr. Kenneth Wright at that institution makes sterilization with the high voltage cathode ray tube a simple matter. Lastly, vessels preserved by this method can be stored indefinitely until used.

Legal permission for the removal of arteries may be obtained in one of three ways. An autopsy permit and an artery bank permit allow removal of the aorta, iliac and femoral arteries. An autopsy permit alone allows removal of the aorta and iliac arteries

* Presented to the Trauma Committee of the American College of Surgeons at Portland, Maine, April 21, 1954.

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while an artery bank permit alone allows removal of the aorta, iliac and femoral vessels without performing an autopsy.

In selecting donor bodies probably the physiological age rather than the chronological age is the more important factor. Generally patients under 45 years of age are selected and if the body is refrigerated soon after death the vessels can be removed and successfully used up to 35 hours post mortem.¹⁶

The vessels are removed, rinsed in cold tap water to remove clots, and heat-sealed in double polyethylene bags with an identifying number between the inner and outer bags. The vessels are then immediately frozen in a dry ice refrigerator at -70°C . They may be kept here indefinitely until taken to M. I. T. in a dry ice thermos bottle for sterilization. Once sterile they may be stored indefinitely until used. A complete record and description including accurate measurements of each vessel is kept in an artery bank book.

When an artery is to be used it is removed from the bank, dipped in tincture of zephiran and one end of the outer polyethylene bag is removed with scissors. The inner bag is withdrawn and the opposite end of this bag is cut off allowing the artery to be removed. The frozen artery is placed in a bowl of normal saline for thawing. Any adventitious tissue must be removed from the vessel and all branches are ligated with silk. The vessel is then ready to be implanted into the host.

Arteries preserved by this method are dead and merely act as a framework over which the host's endothelium and fibrous tissue may grow. The ultimate fate of these grafts is unknown. All cellular elements in these grafts are destroyed by the end of the third week while elastic fibers persist for at least two years.¹⁷ Whether the grafts have been preserved by the balanced salt solution method or by a freezing method the elastic laminae undergo fragmentation and the media frequently shows varying degrees of calcification.¹⁸ While these changes are similar to the early changes of arteriosclerosis they are functionally of little importance.^{19, 20}

In summary five methods of arterial preservation have been reviewed. The organization of the Artery Bank at the Maine General Hospital utilizing the freeze-irradiation method of Meeker and Gross has been described in detail.

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AMA Exhibit in Nation's Capitol

By special invitation of the museum, the American Medical Association will display its exhibit, "The Organs of the Human Body," at the Smithsonian Institution in Washington, D. C., during 1954. After this year, this exhibit will be available for showings in other museums throughout the country.

A new exhibit—"The Physician's Responsibility in Highway Accidents"—calls the doctor's attention to the fact that he should warn patients about the dangers of driving while under the influence of sedatives, antihistamines or anticonvulsive drugs. For professional showings only, this exhibit may be booked through the AMA's Bureau of Exhibits.

RURAL GYNECOLOGY IN HOSPITAL AND OFFICE PRACTICE

E. D. HUMPHREYS, M. D., M. A. WEBBER, M. D., PAUL R. BRIGGS, M. D.

Gynecology and obstetrics are so closely allied that a good knowledge of one is impossible without the involvement of the other. Treatment, surgical, radiological and medical, varies, and what one observer finds helpful another discards as useless. It is necessary to have a good understanding of the drugs provided by modern medicine before using them at all and the surgical and radiological approach should not be considered lightly and shrugged off with the belief that "75% of these cases will get well anyway so it little matters what that treatment should be."

It is true that most any drug or surgical supply salesman can give one "pointers" on how to prescribe for this or that but if this were all that was necessary we would require no knowledge of the fundamentals. These gentlemen mean well but are very confusing in that they have something to sell and only a short time to do it in. They tell you the promising things about their "house product" but neglect to tell you the harm that may result if that same product is used without discretion. These individuals are completely within their rights as their job is to sell and ours is to use their product or procedure on the human organism. It is imperative therefore that we know more about these concoctions and appliances than the cost, mode of administration, use, and expected effect.

We will cite results of procedures and medication as derived from experience within and without our hospital because we believe it will aid other practitioners in the handling of gynecological problems.

In the hormone treatment of our women patients we have found that a review of the menstrual cycle is helpful. The glands (endocrine) should also be considered as one is dependent upon the other to insure a smooth running machine. As briefly as possible, we will recall the 28-day cycle as we understand it. This is divided almost equally histologically and physiologically, the first 14 days are called the proliferative stage, the last 14 days are noted as the secretory stage. The entire period is closely related to both the ovarian and pituitary glands but other endocrines do enter into the picture and have a profound effect upon the cycle. The pituitary starts the cycle by giving off a hormone which is carried to the ovarian follicle via the blood stream where it stimulates said follicle to maturation or ripening and at the same time incites the granulosa cells to form estrin, the ovum is extruded and a corpus luteum is formed in the follicle. Then a second hormone is said to be released from the pituitary which passes in the blood stream to the ovary where it causes progesterone to be released from the corpus luteal area. This same progesterone inhibits contractions of uterine muscu-

lature and if conception has not occurred the pituitary hormone again stimulates the ovary to manufacture estrin and the cycle starts again. One ovarian follicle is said to mature from the 14th to the 16th day. Excretion of the hormones is thought to take place, for the most part, through the urine and liver hence estradiol (proliferative stage), pregnandiol (progesterone or secretory stage), if pregnancy continues pregnandiol increases. A third hormone is excreted by the pituitary which helps the corpus luteum persist if pregnancy occurs: this indirectly with the help of progesterone allays uterine contractions and prevents abortion. The thyroid and mammary glands enlarge during menses and pregnancy and the adrenal appears depressed.

Estrogenic treatment should not be given promiscuously, especially if there is a history of carcinoma in the family or in the patient. These substances cause mammary and uterine changes and may precipitate an otherwise dormant carcinoma. In *endometriosis* estrins are definitely contraindicated, here we often use the male sex hormone as a test for this condition as it alleviates the pain in relation to the period. The cure of this however is, of course, sterilization by oophorectomy bilateral and hysterectomy or by X-ray therapy after these people have had their quota of children. We routinely examine the breasts of all women and do a pelvic examination before starting estrogen therapy and if tumors of the breast are found or the uterus has a palpable tumor of any kind, we believe this form of therapy should not be used until further investigation is completed. The average woman who approaches menopause does not need estrogens, giving them at this time prolongs the agony and may mask symptoms of a more serious condition. We feel that all estrogens should be given by mouth or rectum if possible.

We have used Estrogen in Involutional Melancholia with fair results but doubt if it surpasses "shock therapy." In using it for this mental condition we give it intermittently in the form of stilbestrol, one mg. in the evening for three weeks, we then skip two weeks in which we give phenobarbital in mild doses and go back to stilbestrol gradually decreasing the dosage. In the *Senile Vaginitis* patient with a pruritis we have had gratifying results (after ruling out malignant disease) by using stilbestrol rectally and by mouth. The *vulvo-vaginitis* of two children who recently came under our observation and did not respond to antibiotics was cured by estrogenic hormone which changed the vaginal flora from neutral to acid reaction. Routinely we use stilbestrol to suppress lactation in our institution. However, when

a patient calls at the office or on the phone and reports breast engorgement or milk production several weeks after delivery we prescribe testosterone in adequate doses (ten mg. for ten days). We never use estrogens to bring about menses because of its substitutional quality in causing withdrawal bleeding.

Progesterone is given in adequate doses before performing a hysterectomy because it makes the bladder flaps easier to separate from the cervix and gives the same appearance and pliability one notes in the pregnant women when performing a low section caesarian (as regards the bladder flap).

In secondary amenorrhea progesterone is given after the method of Zondek or 10 mg. per day for five days. The property of this corpus luteum substance in inhibiting uterine contractions has led us to use this drug on the occasional case of habitual aborters along or in combination with thyroid.

The pituitary extracts prolan A and B have had a limited use by us, the former in the motor regulation of the ovary, the latter in the lutenizing factor. *Pituitrin* itself we use very little today because of many sad experiences with retained placenta and contraction rings which may or may not have been coincidental.

Vitamin E is given to many of our menopausal patients because of the apparent feeling of well-being it produces and for its oxygenation effect on tissue. This is given in doses of 150 to 200 mg. per day.

Adrenal glandular disturbances such as Addison's disease seem to have a definite effect on the menstrual cycle as well as on conception. A case treated by one of us immediately had regular menses and became pregnant after several months of adequate therapy. It is our belief that the irregularities attached to Pulmonary T. B. as regards menses are in many instances due to adrenal involvement and interchange between glands of the endocrine category.

The Thyroid gland has a definite position in the endocrine chain. We have administered one grain daily to our pregnant patients for three months when they felt sluggish on the grounds that most pregnant women have B. M. R. drops and their blood cholesterol seems to elevate early in pregnancy. We use thyroid (whole gland) cautiously in the people of menopausal age as they do not tolerate it well.

It has been routine for us to do a B. M. R. and blood cholesterol on cases of amenorrhea which do not respond to other therapy and thyroid is given to these people if indicated. When habitual abortion is present or a woman who desires to become pregnant fails without apparent reason, it has been our policy to study her B. M. R. and blood cholesterol and if found necessary administer thyroid. Providing the B. M. R. is within normal limits or lower and the pulse is under 80 per minute the administration of

thyroid has been found to prevent abortion in a large number of our patients and to aid conception in many others.

Two women under our care developed carcinoma of the breast approximately three years after thyroidectomy which has led us to wonder if there was not some inhibition liberated by this gland removal as both were myxedematous.

Prostigmin is used for delayed menses in women when the neurogenic factor seems to be outstanding. We have had three occasions of "black out" due to sensitivity which happily were not serious.

The notorious *Quinine* which has been heralded as a precursor of abortion has been used by us on the pregnant women for "night cramps" with no ill effects and with good results as regards the alleviation of their complaint in the lower extremities.

The pregnant women who present themselves with a pruritis of severe nature have smears and cultures made of the vaginal flora. The majority of these prove to be yeast or moniliasis infection and respond well to gentian compounds, a propion gel (Wyeth), or propionic acid (4%), those not cured by this are given gentian violet (2%) aqueous and Methylene Blue 2% aqueous, alternating the painting of the vagina twice a week for about three weeks. Moniliasis seems very common to pregnancy and is often overlooked.

Trichomoniasis infection may be diagnosed by inspection alone. Here the vagina shows punctate areas as does the cervix, these spots vary from blue to pink and the discharge is bubbly whereas in monilia it is cheesy, a slide and smear will differentiate. It has been our custom to use a capsule containing Boric acid, dextrose, and lactose of 5 grains each for trichomoniasis, inserting this in vagina A. M. and P. M. supplemented with vinegar douches. When the acidification of the vagina fails we have resorted to silver picrate powder and suppositories or gentian violet.

Premenstrual tension which seems to be rather a common complaint in our female patients (especially the women of the middle thirties) is treated with methyl testosterone indefinitely if necessary six days before period. One patient under observation went into involutional melancholia following estrogen therapy which seemingly aggravated her condition.

Cystitis has been treated with various antibiotics and sulfonamides. Aureomycin and sulfadiazine have seemed to give us the best results in our routine cases. Sulfa drugs due to calculi forming tendency are used cautiously on pregnant women due to slower kidney function which occurs in many.

Endocervicitis when acute has responded well to silver picrate, coupled with various antibiotics. In chronic cases a biopsy is always taken and a conization or deep cautery of the "wheel spoke type" is

instituted if the biopsy proves negative. We have not found pregnancy a contraindication for biopsy either of tissue or the sponge variety. The sponge method of Gladstone is a rather unique and easy method for ruling out a suspicious cervix but for some reason pathologists do not acclimate themselves to this. One of us took a sponge biopsy on a patient and sent it to a pathologist and he reported it negative, later we sent a tissue biopsy and he reported it positive for carcinoma of the cervix. When asked how he made out with the sponge biopsy in a general conversation he said "to tell the truth I just glanced at it"—he was asked to look at it again and exclaimed, "there sure is plenty of malignant cells in this. I wish I had spent more time with it." It is a very simple method for office use and if taken in the right manner a powerful adjunct to diagnosis and, providing the pathologist has patience and is willing it will add to his income, as most of us do not like to do tissue biopsies in the office.

A few words regarding *pitocin*. We have not as yet come to this "having deliveries by appointment" but may as we have adjusted to many other new procedures if they are deemed warranted. We use *pitocin* to bring on forceful contractions in selected cases 10 gts. to 500 c.c. of glucose in water or saline with a slow drip.

In respect to the use of pessaries we have found them helpful, even curative in some instances, especially in retroversion symptoms. However, the old fashioned type of "spring contraceptive pessary" which extends into the cervical canal has been noted on three occasions to be harmful. One case developed a carcinoma unknown to the patient which we attributed to chronic irritation and inadequate drainage of the cervical canal, although it may have been coincidental; a second developed a severe endocervicitis which yielded to deep cautery, whereas the third person who used this type of contraceptive developed sepsis which extended from the uterus into peritoneal cavity via the right fallopian tube with a resultant peritonitis and abscess formation of the mixed type. In the last mentioned, after an exploratory laparotomy and adequate pelvic drainage was instituted, the pessary was removed per vagina with difficulty, because of the granulation tissue surrounding it. This was followed by a copious extravasation of foul pus. Not many years ago it was customary to change these pessaries once or twice a year and in this patient a change had not been made in fourteen months.

Ergotrate is routine in all deliveries to help the uterus contract and shut down on the bleeding uterine sinuses after the placenta has been delivered but we

have not as yet been convinced that it is good treatment to give this prior to the third stage completion. Pentobarbital sodium, scopolamine, and demerol are still our drugs of choice in allaying painful contractions of childbirth.

Vitamin K has been given prophylactically and routinely to all confinement cases by two of us for over a period of several years in hopes of preventing excessive hemorrhage in the mother and hemorrhagic disease of the new born in the infant, especially in the mother who has previously undergone antibiotic treatment of long duration. Our results have been satisfactory from the clinical and laboratory point of view.

Shock is best treated prophylactically also. In all anticipated risks and all operative procedures it is our custom to get a needle in the vein before shock occurs, to type and cross match blood if any way possible and not wait for the various drugs to be put to work to combat the condition after it has set in. We still believe in cross matching blood and are not content with the mere typing of it or in using the "universal so-called donor" of type O Rh negative. We have found that a needle in the vein is a good insurance against a fatal or morbid result for in a country practice one must get almost 100% results or his practice is doomed. Everybody knows the other fellow and they frequently compare notes. We learn to be cautious and have to keep on our toes and ready for what may come. We have further discarded the shock blocks and foot of bed elevation in incipient shock realizing that most of cerebral return circulation depends on gravity due to no physiological muscular wall elasticity. Cerebral anoxia results from lack of a good return flow of blood from the head. The head is kept level or slightly raised with a pillow.

The Foley catheter is another article we cannot afford to be without. It is a simple retention catheter but saves many headaches from our point of view and for the nursing staff. All pelvic operations are started with a catheter in place. It, also, helps control the incontinent patient.

In conclusion, we have briefly outlined some of the methods we use in treating our female patients with the hope that our methods will aid others in their practice of medicine in the rural areas where people do not always have access to specialists and cannot be referred in every problem.

May we suggest that there is no hard and fast rule for any procedure but that we have found the above applicable and helpful in our rural gynecological and obstetrical practice.



THE PRESIDENT'S MESSAGE

My year as President of the Maine Medical Association has been a very pleasant one. By the time this is published, I will have visited all of the County Associations except possibly one. This one I could not visit as I never knew when they had a meeting.

The county meetings were well attended and the prime object of our Association—"Mutual Professional Improvement"—was accomplished by instructive, professional papers at all meetings.

This year two new committees have been created; one a committee on public health to work with Dean Fisher and assist in any way possible in promoting the general health of the state by proper legislation. The other a committee on Alcoholism.

The Association has lived within its income, even though the purchasing power of the dollar has decreased. Mrs. Kennard who has served the Association most efficiently and faithfully for twenty-four years has suffered from Iritis and Glaucoma necessitating an operation. Mrs. Kennard wrote the Council offering to take a \$500.00 reduction in salary because she felt she had not been able to do all the work she thought should be done. The Council felt that Mrs. Kennard is well worth all we pay her and her kind offer was declined. Mrs. Cartwright has done a good job. The general feeling of the Council was that she is under paid. The Council has repeatedly voiced its approval of Mayo Payson. His salary should not be decreased.

Tom Foster has done an excellent job as Editor of the JOURNAL. The Editorial Board of the JOURNAL requested that the editor be given an expense account of \$200.00 per year to enable him to visit the various county associations which they feel will improve the JOURNAL.

My feeling is that the dues should be increased to \$40.00 per year. The Council has not approved my suggestion. In support of my view, I hope you will note the program and observe that the Association has contributed little toward our speakers; one having been sponsored by the Department of Maternal and Child Health and another sponsored by the Maine Tuberculosis Association. Thus I will close my report with the unpopular remark that it still is my opinion that the dues should be increased.

NORMAN H. NICKERSON, M. D.,
President, Maine Medical Association.

The Journal of the Maine Medical Association

THOMAS A. FOSTER, M. D., Portland, Editor

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Business and Pleasure

The Annual Meeting brings together one out of every three members. Among the number who gather every June are the officers, councilors, committee chairmen, committee members, the delegates to the House and those who take a part in the program. These gentlemen have at every session an increasingly large and important amount of work to dispatch.

We have noted in the years following World War II a better attendance at the meetings of the House of Delegates. This is a good sign. The members of the House of Delegates are elected by their County Society colleagues to represent them at the deliberations and policy making activities of the Association. Their attendance at every session of the House is a duty which should be honored. Their close attention and thoughtful participation is a privilege which should be exercised. We look forward to the transactions of our 101st meeting with some assurance that our honorable medical association remains in

good and steady hands. We have observed, furthermore, at the recent annual meetings that the delegates, many of them, were from the younger echelon. This, also, is a good sign. The association gains strength and vitality from new blood.

The meetings, as long as this scribe can remember, have included wives and children. The memorable and never equalled private car pilgrimage from Portland to Houlton stands in the records as a stag party but the also memorable meeting at Houlton flourished under the hospitable women's committee of Aroostook County. That was a meeting. This year at the Samoset with fair skies and blue waters, fun and pleasure will be available for the family. Many families, we know arrive early and stay late. And this custom sheds a happy and gay atmosphere over the gathering. We hope that the first meeting of our second one hundred years will establish a record for high achievement and merry social gatherings.

Unavoidable Program Change



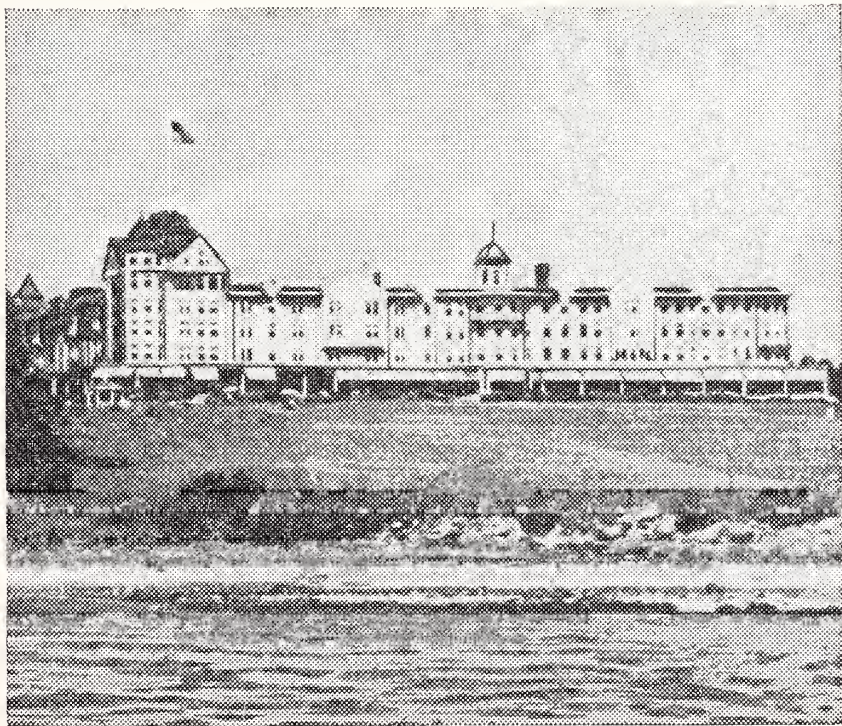
The President of the A. M. A., Dr. Edward J. McCormick, who had graciously accepted our invitation to attend our annual banquet has been obliged to enter the hospital for treatment. During a tour of South American countries for visits with medical societies, he developed a fever which persisted upon his return to St. Louis. Therefore, following his doctor's advice he entered a St. Louis hospital. At last reports he will be confined to the hospital for a rest and has been ordered not to undertake any assignments beyond the necessary duties incumbent on his high office.

Comments on Journal

The JOURNAL is publishing in this issue the last of the medical papers which were presented at our Centennial meeting. The Editor wishes to express his appreciation of the coöperation manifested at all times by the distinguished group of authors who graced our meeting. It has been an enlightening experience to review all the essays. The review has given us an opportunity to realize more fully the high grade of the papers on different facets of the practice of medicine.

While on the subject of medical papers, we would like to acknowledge the assistance of the Business Manager, Mrs. Esther Kennard, for her invaluable advice and painstaking work in having the JOURNAL

in your hands every month. We would like, also, at this time to thank the members of the Editorial Board for their coöperation throughout the year. The staff members in most of our contributing hospitals have responded generously and enthusiastically to the requests of their respective staff editors. We plan to continue the policy of "hospital numbers" for the ensuing year. And, we entreat the delinquent members to awaken and submit papers on the next time around. We believe that during the past year the JOURNAL has offered to the members many excellent papers and case reports of unusual and timely interest. We bespeak your alert, continued interest.



Headquarters

The Samoset, Rockland, Maine — June 13, 14, 15, 1954

101st Annual Session

In Memoriam

Androscoggin County

Roger L. Dionne, M. D.,	Lewiston
Blinn W. Russell, M. D.,	Lewiston

Aroostook County

Louis N. Albert, M. D.,	Van Buren
Frederick L. Gregory, M. D.,	Caribou
Wiley E. Sincock, M. D.,	Caribou

Cumberland County

Henry H. Brock, M. D.,	Alfred
Arthur L. Gould, M. D.,	Freeport
Edwin W. Gehring, M. D.,	Portland
Nessib S. Kupelian, M. D.,	Gray
Walter E. Tobie, M. D.,	Portland

Franklin County

Albion E. Floyd, M. D.,	New Sharon
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Kennebec County

Elmer H. Jackson, M. D.,	Augusta
Howard A. Milliken, M. D.,	Hallowell
William J. O'Connor, M. D.,	Augusta
Joseph E. Odiorne, M. D.,	Cooper's Mills
John O. Piper, M. D.,	Waterville
John G. Towne, M. D.,	Waterville
Forrest C. Tyson, M. D.,	Augusta

Lincoln-Sagadahoc County

Philip H. Sylvester, M. D.,	Damariscotta
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Penobscot County

Blanche M. Mansfield, M. D.,	Bangor
Calvin M. Thomas, M. D.,	Brewer

Piscataquis County

Nathaniel H. Crosby, M. D.,	Milo
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York County

George R. Bancroft, Jr., M. D.,	Kennebunkport
Leon Nemon, M. D.,	Portland
Elmer M. Tower, M. D.,	Ogunquit

COMMITTEE REPORTS

Health Insurance Committee

To the Officers and Members of the Maine Medical Association:

As Chairman of the Health Insurance Committee of the Maine Medical Association, I should like again to thank the Committee members for their attendance at the meeting which was held during the past year and again for their interest in the problem of sickness insurance. This insurance is becoming a more important subject every year and considerable time must be spent in the study of the problem and in keeping up with the changing tempo in the sickness insurance plans.

One meeting was held by this Committee on January 27, 1954, at the Lafayette Hotel in Portland. One of the questions asked was whether an additional fee should be paid out of Blue Shield funds to the obstetrician for rupturing the membranes to induce labor. The Committee felt that this should not carry an extra fee.

Another question brought before the Committee was whether or not the pathologist should be paid out of Blue Shield funds for frozen sections when he goes outside his hospital. The Committee felt that the pathologist was entitled to the established consultation fee of three dollars for this work.

The question of increasing the anesthesiology fees, which have been unsatisfactory and which have been difficult to handle, was referred to the Anesthesiologists' Society through Dr. Cuneo to see if some equitable way could be presented which would be acceptable to the doctors and the Associated Hospital Service.

There have apparently been arrangements made between Associated Hospital Service and individual physicians or groups of physicians in which this Committee has not been consulted. It is difficult to determine just what the function of this committee is. If this Committee represents all of the medical doctors in the State Society in their dealings with the insurance plans, then the Committee feels that no physician or group of physicians should deal directly with the insurance plans and ignore this committee.

I wish to thank the House of Delegates for the opportunity of serving again as Chairman of this Committee for the year 1953-1954.

WILLIAM F. MAHANEY, M. D.

Committee on Public Relations

To the Officers and Members of the Maine Medical Association:

This committee has followed along with recommendations made by former Public Relations Committees, and again wish to bring before the Association several of these recommendations that have been allowed to pass quietly by without action.

The first and foremost of these recommendations is concerned with the promotion and establishment of local *Medical Forums* to be conducted at the local level by County Societies throughout the State wherever practicable. Ethics of the procedure was questioned, but this has been answered by the American Medical Association giving its blessing to the forums. The Chairman of this Committee and Executive Secretary W. Mayo Payson attended a National Public Relations Meeting of the American Medical Association in September, 1953, in Chicago. At this meeting there was unanimous approval of the *Medical Forum* idea, and it was the opinion of the group that it offered one of the best methods to promote good relations between the physician and the public. Our committee unanimously approved of recommending the Forum Project to each County Society for action. Recently, a Forum on Poliomyelitis was held in Bangor, and all reports indicate it was a great success.

It is believed most desirable to again attempt to establish in each county a Speakers' Bureau. The speakers are to be volunteers and selected by their respective societies.

There is a great need throughout the State for the formation of some type of Emergency Medical Service for patients. At the present time, there are only three cities that have an emergency physician call service; but it is recommended that this project be pushed and a service established in as many places as possible in the State. This is entirely a local and county affair and the need differs in each locality.

There have been several meetings of the special committee setup to advise and recommend changes to the Research Committee of the Legislature on Public Health matters in which the committee has participated. The results of these meetings will be found in another report.

Again this year, an effort will be made to arrange an indoctrination meeting for the new members at the State convention in June. It is recommended that this affair be made an annual event in the future.

The members of this committee feel that in order to accomplish its objectives, it is necessary to have an active Public Relations Committee in each County Society and that there should be full coöperation between County and State committees in all Public Relation needs.

Respectfully submitted,

M. TIECHE SHELTON, M. D.,
Chairman,

IRVING I. GOODOF, M. D.,
GILBERT CLAPPERTON, M. D.,
FORREST A. AMES, M. D.,
RALPH A. GOODWIN, M. D.

Investment Committee

To the Officers and Members of the Maine Medical Association:

The Investment Committee has met once formally during the past year and has conferred among its members several times informally concerning the status of the investments.

At the beginning of the year the members conferred on the subject of the existing investments of the Association and on advice of the investment counsel used, the Committee agreed that the investments did not need changing at that time. On February 4th, 1954, the Committee met in Portland to discuss the investment of \$1,000.00 in what is known as the Thayer Library Fund. This sum of money was on deposit in the Savings Bank and since it was to be put to use it was decided it should be invested in something more productive. At that time it was decided to purchase one \$1,000.00 Portland Terminal Company First Mortgage 4% Bond due July 1, 1961. Somewhat later the Committee was notified that one of its bonds, Province of New Brunswick Bond, had been called as of April 19, 1954. The Committee conferred by telephone and correspondence and it was decided to replace this investment by the purchase of 15 shares of Guaranty Trust Stock of New York.

The Committee has noted and called attention to the fact that the Prince A. Morrow Fund is still not being used. The income from the Fund has accumulated and is now in a savings bank and amounts to nearly \$2,000.00. This Fund was set up for the promotion of social hygiene work in Maine. One suggestion that has been made is that a lectureship be established under the name of the Prince A. Morrow lectureship or of Dr. Frank N. Whittier who was associated in this work. The lecture to be delivered at the Annual Session of the Association; the lecturer to be someone selected because of outstanding contribution to social service work in the state or the nation. This may not be the use which the Association would desire this Fund to be put to and is

merely a suggestion, but the Committee feels quite strongly that some use should be made of this Fund.

Investment Committee

WARREN F. KERSHNER, M. D.,
Chairman,

ELTON R. BLAISDELL, M. D.,
EMERSON H. DRAKE, M. D.

Committee on Legislation

To the Officers and Members of the Maine Medical Association:

The Committee on Legislation consists of five members. All matters of professional interest to this Association which require action by the State Legislature are considered by this Committee. In addition, it has closely followed proposed national legislation in matters affecting the medical profession and has acted as advisor to the Executive Secretary when he is engaged as Legislative Counsel and Agent for this Association.

On October 21, 1953, this Committee attended the hearing of the Legislative Research Committee of the State Legislature, in the Judiciary Room, State House, Augusta, on a study by the State of Maine, of the structure and functioning of the Public Health Services locally and statewide. This study includes examination of the statutes creating local public health services to determine whether or not those statutes are suitable and can provide minimum standard local public health services. This hearing was well attended by representatives of all major health agencies in the State and this Committee and your Executive Secretary took an active part in the discussion. In fact, the Legislative Research Committee was greatly impressed with the general purpose for which this study was created, as outlined by our Executive Secretary, and requested that he, as agent for this Association, present to that Committee a more detailed plan for their consideration.

At this hearing, the present plan of operation of the Department of Health and Welfare was very ably presented by its Medical Director, Dr. Dean Fisher. He stated that the Bureau of Health is one of three bureaus in the Department of Health and Welfare, organized to provide both direct and indirect health services for the people of the State.

The Bureau acts to provide technical advice; to prevent, control or ameliorate epidemics or potential disease outbreaks; to conduct investigations, evaluate new hazards and sources of disease; to carry out routine inspections; to maintain laboratory services; to provide certain emergency services; and has law enforcement duties; and coöperates with other agencies for better coördination of activities. It provides consultation services and assists various commissions and control boards. It sets standards for certain activities carried on by others, conducts educational programs, and prepares reports and analyses. It supports or provides directly for clinic, hospital, and medical care services, and administers special programs, as hospital construction under the Hill-Burton Act.

The study on public health services will undoubtedly continue, with consultations and hearings over an extended period of time. It is probable that revision of the present law will be made at the conclusion of this study.

On February 13, 1954, the Committee Chairman and the Executive Secretary, attended the regional legislative conference of the Committee on Legislation of the A. M. A., at the Hotel Roosevelt, New York.

The purpose of the conference was two-fold. It was proposed to explain and perfect a system for alerting key legislative personnel in the states in situations requiring an immediate contact with members of Congress on national legislative affairs. It further proposed to discuss in detail background information regarding, and the current status of the most important medical issues due to come up in Congress during the current session. The key-noters of the conference were C. Joseph Stetler, Secretary of the Committee on Legislation, and Dr. Deering Smith, the member of that committee responsible for this region. The conference was informal,

with active participation from the floor. For your information, the following items were discussed:

1. System for Alerting Key Legislative Personnel.

Have one or two key legislative personnel in each state. These representatives, in turn, have additional key men to alert in an emergency. Eventually, the system results in a contact with a key man in each Congressional District who is in close and intimate contact with the representative in Congress from that District. In addition, there would be one or two intimate contacts with the Senators from the State.

2. Federal Subsidization of Private Health Insurance Plans (S. 3114, H.R. 8356).

At the time of the conference it was impossible to discuss in detail the President's plan because of the vague way it was referred to in his State of the Union Message and in the Special Health Message. Since then, the Administration introduced the bills in Congress and April hearings were held before the Senate Committee on Labor and Public Welfare and the House Committee on Interstate and Foreign Commerce. At the time of this writing, no information on these hearings has been obtained. At our conference, most of those voting opposed and only a few favored some form of federal reinsurance program.

3. Expansion of Social Security Coverage to Include Physicians (H.R. 7199).

In discussing its opposition to being included in the Act, the medical profession has simply stated, along with its reasons, that as individuals, they do not desire to be covered. In testimony before Congress, the A. M. A. would confine itself to the status of physicians and would not attempt to suggest or dictate whether other groups or individuals should be covered. It was also decided not to oppose *voluntary* coverage of physicians under the Act.

4. Permanent and Total Disability Insurance Under Social Security.

While hearings will probably be held and possibly a favorable report be submitted, it is doubtful that these bills pass because of the cost involved and the strenuous opposition interposed by the medical profession.

5. Waiver of Premium Payments Under Title 11 of the Social Security Act During Period of Permanent and Total Disability (H.R. 7800).

It has been decided to take no action on this bill at this time, inasmuch as the present "waiver of premiums" provision would be administered by agencies at the state level without federal intervention or control.

6. Tax Deferrals on Premiums Used to Purchase Retirement Annuities.

The principal measures are H.R. 10-11, introduced by Jenkins and Keogh, respectively. These bills encourage voluntary pension plans by individuals and provide more equitable tax treatment for self-employed persons. They now include all amendments suggested by the A. M. A. at hearings. Through amendment of the Federal Internal Revenue Code, the bills allow physicians and other self-employed persons to deduct from taxable income, amounts used each year to finance restricted retirement plans. Principal objection is from the Treasury Department because of the reduction of Federal revenue. Passage is doubtful, but the A. M. A. approves the bills.

7. Medical Care for Dependents of Service Personnel.

The A. M. A. approves provision of medical care for dependents of service personnel in military facilities and by physicians in uniform in overseas areas and in U. S. areas where civilian medical facilities and personnel are either unavailable or inadequate. It is opposed, however, to the drafting of physicians to provide medical care to such dependents in areas where civilian facilities are available. It feels that the present system is resulting in an excessive amount of such medical care by physicians in uniform and an unnecessary and undesirable expansion of federal medical facilities.

By an unsatisfactory survey, the Moulton Commission recommended that medical care should be provided for all such dependents initially by military doctors in military facilities and that only as a last resort should civilian facilities be utilized. The Administration no doubt will urge enact-

Program

101st ANNUAL SESSION

MAINE MEDICAL ASSOCIATION

JUNE 13, 14, 15, 1954



THE SAMOSET

ROCKLAND, MAINE

Program Arranged by the Scientific Committee



RALPH G. STUART, M. D.,
Chairman

INFORMATION

Registration:

Registration Headquarters throughout the Session will be in the Lobby at The Samoset.

Sunday, June 13—12.00 Noon to 5.30 P. M.

Monday, June 14—9.00 A. M. to 5.30 P. M.

Tuesday, June 15—9.00 A. M. to 5.30 P. M.

Papers:

All papers read before this Association shall be its property for publication in THE JOURNAL OF THE MAINE MEDICAL ASSOCIATION, and when read shall be deposited with the Secretary, Esther M. Kennard.

Visiting Delegates:

Introduction of Visiting Delegates will take place at the General Session, Monday afternoon, June 14.

Meeting Places:

Consult Bulletin Board.

Technical Exhibits:

See Program for intermission to "Visit Technical Exhibits." Don't fail to visit each booth. We want to call your attention to the list of Exhibiting Companies and Representatives which is published with the program and note that this year we have many old and new friends helping us make possible this 101st Annual Session.

Educational Exhibits:

Maine Cancer Society.

Maine Heart Association.

Maine Tuberculosis Association.

National Foundation for Infantile Paralysis.

Out-of-State Delegates

New Hampshire Medical Society

LeRoy S. Ford, M. D., Keene

Vermont State Medical Society

Charles H. Goyette, M. D., Barre

Massachusetts Medical Society

Frank R. Ober, M. D., Boston

Rhode Island Medical Society

Herbert E. Harris, M. D., Providence

Connecticut State Medical Society

James D. Corridon, M. D., South Norwalk

Canadian Medical Association, Quebec Division

Jacques Olivier, M. D., Sherbrooke

PROGRAM

Arranged by the Scientific Committee

Ralph C. Stuart, M. D., Guilford, Chairman

J. Robert Downing, M. D., Kennebunk

Francis H. Sleeper, M. D., Augusta

Sunday, June 13, 1954

2.00 P. M.

First Meeting of the House of Delegates

Robert W. Belknap, M. D., President-elect, Presiding

6.30 P. M.

Dinner:

SPEAKER: MR. LEONARD E. READ



Mr. Read is President of The Foundation for Economic Education, Inc., Irvington-On-Hudson, New York. He was at one time manager of the Los Angeles Chamber of Commerce. His work there won him the executive vice-presidency of the National Industrial Conference Board, which post he vacated to head the work of the Foundation.

His subject will be, Political Robin Hoodism and its Cure.

Monday, June 14, 1954

9.30 A. M.

Second Meeting of the House of Delegates

Robert W. Belknap, M. D., President-elect, Presiding

10.30 A. M.

Maine Heart Association Clinical Program

Chairman, Elton R. Blaisdell, M. D., Portland, Vice President, Maine Heart Association

CLINICAL BALLISTOCARDIOGRAPHY

Mason Trowbridge, Jr., M. D., Ellsworth

Wilbur B. Manter, M. D., Bangor

SURGICAL CARDIAC PROGRAM IN COMMUNITY HOSPITAL

Ralf Martin, M. D., Portland

Emerson H. Drake, M. D., Portland

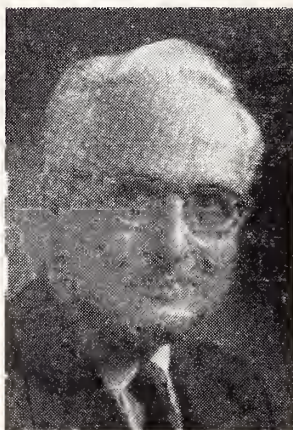
SPINAL ANESTHESIA IN PATIENTS WITH ARTERIO-SCLEROTIC HEART DISEASE

Jacob Dana, M. D., Togus

Robert L. Ohler, M. D., Togus

11.00 A. M.

SPEAKER: ALTON GOLDBLOOM, M. D.



Dr. Goldbloom, who was born in Montreal in 1890, was graduated from McGill University Faculty of Medicine in 1916 and received his Pediatric Training at the Boston Floating Hospital, Boston, and Babies' Hospital, New York. He is Emeritus Professor of Pediatrics at McGill and Consultant at Children's Memorial Hospital, Montreal. Windermere Lecturer, England, 1954. (He is sponsored by the State of Maine Department of Maternal and Child Health.)

Dr. Goldbloom's subject will be, Fact and Fancy in Infant Feeding.

11.45 A. M.

Visit Technical Exhibits

12.30 P. M.

Luncheon

Luncheon Meetings:

Meeting of Secretaries of the County Medical Societies

Board of Directors of the Maine Heart Association

Speaker: **Rome Betts**, Executive Director, American Heart Association

2.00 P. M.

General Session:

Presiding, **Ralph C. Stuart, M. D.**

SPEAKER: RICHARD B. CATTELL, M. D.



The Surgical Management of Thyroid Diseases is the subject chosen by Dr. Cattell, Director of the Lahey Clinic in Boston. Dr. Cattell, who was graduated from Harvard Medical School in 1925, is Surgeon-in-Chief at the New England Baptist Hospital, and Surgeon at the New England Deaconess Hospital, Robert Breck Brigham Hospital, Massachusetts Women's Hospital and Booth Memorial Hospital. He was Honorary Consultant, Bureau of Medicine and Surgery, United States Navy, 1942-1952. He is a member of the American Board of Surgery.

3.00 P. M.

Presiding, **Norman H. Nickerson, M. D.**, President

Election of President-elect

Introduction of Visiting Delegates

4.30 P. M.

Visit Technical Exhibits

6.30 P. M.

Clam Bake

Tuesday, June 15, 1954

9.30 A. M.

Maine Medico-Legal Society Business Meeting:

Reports of Officers

Election of Officers

10.00 A. M.

General Session:

Presiding, **J. Robert Downing, M. D.**

SPEAKER: THEODORE L. BADGER, M. D.

Dr. Badger is Clinical Associate in Medicine at Harvard Medical School, Consultant in Diseases of the Lungs, Veterans Administration Hospital, Boston; Chief of the Medical Thoracic Clinic, Boston City Hospital and Chairman of the Subcommittee on Tuberculosis, National Research Council. He was graduated from Harvard Medical School in 1926. (He is sponsored by the Maine Tuberculosis Association.)

His subject will be, Rest, Exercise and Chemotherapy in the Treatment of Tuberculosis.



11.00 A. M.

Presiding, **Francis H. Sleeper, M. D.**

Speaker: **Donald Coultou, M. D.**, Bangor

Subject: CONTROLLED LABOR

12.00 Noon

Visit Technical Exhibits

12.30 P. M.

Luncheon

Luncheon Meeting:

Indoctrination Meeting for new members of the Maine Medical Association

Speaker: **Frederick T. Hill, M. D.**, Waterville

Subject: PUBLIC RELATIONS IN THE PRACTICE OF MEDICINE

2.00 P. M.

Maine Medico-Legal Society:

Remarks by **Attorney General Alexander A. LaFleur**, President, Maine Medico-Legal Society

Remarks by **Robert Marx**, Chief of State of Maine Police

Presentation of Case by **Richard C. Wadsworth, M. D.**, with **County Attorney Oscar Fellows**



Dr. Ford

Address with pictures by **Richard Ford, M. D.**, Head of the Medico-Legal Department, Harvard Medical School. Dr. Ford was graduated from Harvard Medical School in 1940. He has been Medical Examiner of Suffolk County since 1950 and is Consulting Pathologist to the Massachusetts State Police.

Address by **Attorney General Louis C. Wyman** of New Hampshire

Subject: COMMUNIST ACTIVITIES

6.30 P. M.

ANNUAL BANQUET

(Dress Optional)

Presentation of medals and awards

President's Address—**Norman H. Nickerson, M. D.**

Guest Speaker:

Cyrus H. Maxwell, M. D., Assistant Director, A. M. A. Washington Office

Subject: SPRING IN WASHINGTON

SPECIAL NOTICES

GOLF TOURNAMENT

Francis A. Winchenbach, M. D., Bath, Chairman

TUESDAY, JUNE 15, 2.00 P. M.

Maine Trudeau Society Organization Meeting

Honorary Medals

Presentation of the Association's Honorary Medals will be made by Dr. Norman H. Nickerson, President, at the Annual Banquet, Tuesday evening, June 15th.

FIFTY-YEAR PINS

Fifty-Year Lapel Pins will be presented to the following members who were graduated from Medical School in 1904:

Cumberland County Medical Society

Charles L. Cragin, M. D., Portland
Bowdoin Medical School, 1904

Franklin County Medical Society

George L. Pratt, M. D., Farmington
Bowdoin Medical School, 1904

Lincoln-Sagadahoc County Medical Society

Harry F. Morin, M. D., Bath
Boston University School of Medicine, 1904

Oxford County Medical Society

Delbert M. Stewart, M. D., South Paris
Bowdoin Medical School, 1904

Penobscot County Medical Society

Carl J. Hedin, M. D., Brewer
Dartmouth Medical School, 1904

Arthur C. Strout, M. D., Dexter

College of Physicians and Surgeons, Boston, 1904

Piscataquis County Medical Society

Wilbur E. MacDougal, M. D., Dover-Foxcroft
College of Physicians and Surgeons, Baltimore, 1904

York County Medical Society

Laura B. Stickney, M. D., Saco
College of Physicians and Surgeons, Boston, 1904

Ray L. Whitney, M. D., Cape Porpoise
Harvard Medical School, 1904

FIFTY-FIVE-YEAR PINS

The following members who received their Fifty-Year Medals in June, 1949, will receive Fifty-Five-Year Pins:

Cumberland County Medical Society

Albert D. Foster, M. D., Falmouth Foreside

Penobscot County Medical Society

John B. Thompson, M. D., Bangor

Waldo County Medical Society

Eugene D. Tapley, M. D., Belfast

York County Medical Society

Fitz E. Small, M. D., Biddeford

SIXTY-YEAR PINS

Sixty-Year Pins will be presented to the following members who received their Fifty-Year Medals in 1944:

Androscoggin County Medical Society

Albert W. Plummer, M. D., Lisbon Falls

Cumberland County Medical Society

Harvey Howard, M. D., Freeport

Penobscot County Medical Society

Joseph A. Lethiecq, M. D., Brewer

York County Medical Society

Arthur J. Stimpson, M. D., Kennebunk

PROGRAM

Woman's Auxiliary

to the

Maine Medical Association

Sixth Annual Convention, June 13, 14, 15, 1954

Rockland, Maine

Headquarters—The Samoset

PROGRAM

The program includes a tea Sunday afternoon, group singing Sunday evening led by Dr. C. Harold Jameson and accompanied by Mrs. Harry Tounge, Jr., and Mrs. Oram Lawry, Jr., a luncheon meeting Monday noon—preceded by a Social Hour—at one of Camden's Summer Tea Rooms or Inns, Boat rides Monday afternoon—men invited, Golf Tuesday morning and the Annual Luncheon Tuesday noon. There are also many places of interest which many of you will want to visit. And, you are invited to attend the evening meetings of the Maine Medical Association.

See the Bulletin Board for Information relative to time and place of daytime meetings.

See the Maine Medical Association program for details regarding the evening sessions.

ANNUAL MEETING LUNCHEON

The Annual Meeting Luncheon will be held at The Samoset, Tuesday, June 15, 1954, at 1.00 P. M., with Mrs. Asa C. Adams, President, presiding.

Included in the Order of Business will be the Installation of Officers by Mrs. Robert Flanders, First Vice-President of the Woman's Auxiliary to the American Medical Association.



Mrs. Adams

NOTICE

Convention plans and reservation blanks have been mailed to members of the Maine Medical Association.

CONVENTION COMMITTEE CHAIRMEN

Hostesses:

Mrs. C. Harold Jameson
Mrs. Donald B. Hawkins
Mrs. Herman J. Weisman

Golf and Golf Prizes:

Mrs. Robert L. Allen

Sailing:

Mrs. Howard L. Apollonio

Tea:

Mrs. Donald B. Hawkins
Mrs. Frank W. Kibbe

Registration and Identification:

Mrs. Oram R. Lawry, Jr.
Mrs. Wesley N. Wasgatt
Mrs. Gilmore W. Soule
Mrs. William A. McLellan
Mrs. David Mann
Mrs. Frederick C. Dennison

Transportation:

Mrs. Frank W. Kibbe
Mrs. Frederick C. Dennison

Press and Publicity:

Mrs. Herman J. Weisman
Mrs. Paul A. Millington

OFFICIAL DELEGATES — 1954

County Medical Societies

FIRST DISTRICT

Cumberland County Medical Society

Delegates (2 years):

Henry M. Tabachnick, M. D., 110 Park Ave., Portland
 Ronald A. Bettle, M. D., 32 Federal St., Brunswick
 William C. Burrage, M. D., 57 Deering St., Portland
 Edward G. Asherman, M. D., 31 Deering St., Portland

(1 year):

Daniel F. Hanley, M. D., 58 Federal St., Brunswick
 George I. Geer, Jr., M. D., 690 Congress St., Portland
 Ralph Heifetz, M. D., 173 State St., Portland
 Sidney R. Branson, M. D., 37 Main St., South Windham

Alternates (2 years):

Eugene C. McCann, M. D., 49 Deering St., Portland
 Albert W. Moulton, Jr., M. D., 180 State St., Portland
 Gisela K. Davidson, M. D., 49 Deering St., Portland
 Harvey B. Ansell, M. D., 39 Deering St., Portland

(1 year):

Donald G. Wight, M. D., 30 Mitchell Rd., South Portland
 G. Hermann Derry, Jr., M. D., 690 Congress St., Portland
 William A. Ventimiglia, M. D., 22 Deering St., Portland
 Philip P. Thompson, Jr., M. D., 704 Congress St., Portland

York County Medical Society

Delegates:

Kenneth J. Cuneo, M. D., 31 Summer St., Kennebunk
 Frank W. Barden, M. D., Saco-Lowell Shops, Biddeford
 James W. Macdonald, M. D., 103 Main St., Kennebunk

Alternates:

Marcel P. Houle, M. D., 13 Bacon St., Biddeford
 Alexander W. Magocsi, M. D., York
 Carl E. Richards, M. D., 28 Winter St., Sanford

SECOND DISTRICT

Androscoggin County Medical Society

Delegates:

Charles W. Steele, M. D., 472 Main St., Lewiston
 Ross W. Green, M. D., 33 Court St., Auburn
 Charles F. Branch, M. D., 69 Gamage Ave., Auburn
 Ralph A. Goodwin, Sr., M. D., 56 Denison St., Auburn

Franklin County Medical Society

Delegate:

Paul E. Floyd, M. D., 2 Middle St., Farmington

Alternate:

Philip B. Chase, M. D., 36 Main St., Farmington

Oxford County Medical Society

Delegates (2 years):

James A. MacDougall, M. D., 303 Penobscot St., Rumford

(1 year):

Peter B. Aucoin, M. D., 77 Rumford Ave., Rumford

Alternates (2 years):

John F. Hughes, M. D., Dixfield

(1 year):

Harry L. Harper, M. D., 17 Main St., South Paris

THIRD DISTRICT

Knox County Medical Society

Delegates:

Robert L. Allen, M. D., 37 Spring St., Rockland
 William A. McLellan, M. D., 2 Union St., Camden

Lincoln-Sagadahoc County Medical Society

Delegate:

Stanley R. Lenfest, M. D., Waldoboro

Alternate:

Arthur A. Nichols, M. D., Wiscasset

FOURTH DISTRICT

Kennebec County Medical Society

Delegates:

Kurt A. Sommerfeld, M. D., 5 Brunswick Ave., Gardiner
 Loring W. Pratt, M. D., 177 Main St., Waterville
 Kenneth W. Sewall, M. D., 173 Main St., Waterville
 Philip Dachslager, M. D., 21 Western Ave., Augusta
 Brinton T. Darlington, M. D., 31 Western Ave., Augusta

Alternates:

Edmund N. Ervin, M. D., 2 School St., Waterville
 Clarence E. Dore, M. D., 65 Temple St., Waterville
 Oakley A. Melendy, M. D., 21 Western Ave., Augusta
 Stephen W. Sanders, M. D., 120 Main St., Winthrop
 Frank B. Bull, M. D., 72 Church St., Gardiner

Somerset County Medical Society

Delegate:

George E. Sullivan, M. D., Bingham

Waldo County Medical Society

Delegate:

George L. Temple, M. D., 18 Franklin St., Belfast

Alternate:

Carl H. Stevens, M. D., 18 Franklin St., Belfast

FIFTH DISTRICT

Hancock County Medical Society

Delegate:

James H. Crowe, M. D., 121 Main St., Ellsworth

Alternate:

Philip L. Gray, M. D., Blue Hill

Washington County Medical Society

Delegate:

John T. Metcalf, M. D., Calais

Alternate:

Oscar F. Larson, M. D., Machias

SIXTH DISTRICT

Aroostook County Medical Society

Delegates:

Herrick C. Kimball, M. D., P. O. Box 249, Fort Fairfield
 Clement L. Donahue, M. D., 3 Prospect St., Caribou

Alternates:

P. L. B. Ebbett, M. D., Houlton
 Clyde I. Swett, M. D., Island Falls

Penobscot County Medical Society

Delegates:

Robert J. Barrett, Jr., M. D., 209 State St., Bangor
 Paul Burke, M. D., 5 High St., Newport
 W. C. McNamara, M. D., 8 Lee St., Lincoln
 Clarence Emery, M. D., 92 Essex St., Bangor

Alternates:

Arthur Lieberman, M. D., 180 Broadway, Bangor
 W. I. Butterfield, M. D., 119 Main St., Lincoln
 Donald Bridges, M. D., 263 State St., Bangor
 Robert Kellogg, M. D., 316 State St., Bangor

Piscataquis County Medical Society

Delegate:

Ralph C. Stuart, M. D., Guilford

Alternate:

Linus J. Stitham, M. D., 50 Main St., Dover-Foxcroft

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NOTICE

State of Maine Board of Registration of Medicine

Adam P. Leighton, M. D., 192 State Street, Portland, Secretary.

List of Physicians Licensed on March 10, 1954, to practice Medicine and Surgery in the State of Maine.

Simon G. Beaudet, M. D., 360 Riverside Drive, New York 25, N. Y.

David J. Evancie, M. D., 166 Broadway, Bangor, Maine.

Thomas G. Gibbons, M. D., 107 Rice Street, Edmundston, N. B.

John D. Hicks, M. D., Hospital of the University of Pennsylvania, Dept. of Ophthalmology, Philadelphia, Pa.

Friedrich W. Klutzow, M. D., Newton Wellesley Hospital, Newton Lower-Falls, Mass.

Charles H. Lightbody, M. D., 36 Kingsbury Street, Worcester, Mass.

Francis W. Nugent, M. D., 130 Sutherland Road, Brighton, Mass.

Patrick J. Tuite, M. D., Hoffman House, State Hospital, Central Islip, N. Y.

Through Reciprocity

Charles H. Bishop, M. D., 288 Coney Street, East Walpole, Mass.

Nelson P. Blackburn, M. D., Salem Hospital, Salem, Mass.

Thomas V. Brennan, M. D., Woodstock, N. B.

Frederick R. Brown, Jr., M. D., Maine General Hospital, Portland, Maine.

George E. Farrell, M. D., 15 Ann Street, Waterville, Maine.

Frederick J. Gregory, M. D., Worcester City Hospital, Worcester, Mass.

Rudolph J. Junda, M. D., Cary Memorial Hospital, Caribou, Maine.

Andre Sterlin, M. D., Eagle Lake, Maine.

Mortimer H. Wells, Jr., M. D., South Hamilton, Mass.

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Committee Reports—Continued from page 156

ment of this modified form but the A. M. A. has adopted a revised policy to present at the hearings.

8. Proposed Amendment to Limit Treaty Making Powers (Bricker), (S.J. Res. 1).

In tracing the interest of the medical profession in the Bricker Amendment, it is important first to recognize that treaties become the supreme law of the land if ratified by two-thirds of the Senate *present* and voting. In addition, it must be noted that significant changes have occurred in the scope of treaties and executive agreements recently negotiated. Although these instruments formerly involved only international matters, there are now pending treaties or executive agreements whose ratification would change our domestic laws.

Agreements and treaties negotiated pursuant to United Nations provisions, for example, could fundamentally change medical practice in this country if ratified by two-thirds of the Senate *present* and voting.

A series of friendship treaties before the Senate this past year included treaties with Denmark, Holland, Israel, and Greece, which dealt with immigration quotas, citizenship requirements, and matters of professional licensure in various states. If these original treaties had been ratified, some of the requirements of the state medical licensing boards would have been abrogated.

The International Labor Organization, affiliate of United Nations, adopted a convention of "Minimum Standards of Social Security" which includes almost all of the socialist medical proposals up until now rejected by Congress. If this convention were ratified, government would have control of medicine. Because of this danger of socialization of medicine via international treaty, the A. M. A. favors redefinition of existing treaty-making powers.

9. Federal Aid to Medical Education — Military Medical Scholarships.

To combat legislation on Federal aid to medical education, the A. M. A. created the Medical Education Foundation which collects money from physicians and distributes it to medical schools. The Foundation works closely with the National Fund For Medical Education which collects funds from industry and the general public.

Bill S. 1748, 83d Congress, if enacted, would grant a federal charter to the National Fund For Medical Education. It has passed the Senate and will, with amendments proposed by the A. M. A., probably be passed by the House. Its companion bill, H.R. 7911, is now pending hearings.

The A. M. A. favors the proposed bill creating Military Medical Scholarships within certain stipulated safeguards and restrictions.

10. Public Law 51, 82nd Congress, established the National Security Training Commission to study and recommend details of a Universal Military Training program.

The A. M. A., at hearings, did not take a position for or against this program since it felt that this was not primarily a medical problem. It did, however, make five suggestions to the Commission on medical questions for consideration.

11. Income Tax Deductions for Medical Expenses.

The A. M. A. believes that enactment of this legislation will encourage the improvement of present plans, will extend coverage, will help reduce costs of illness, and will encourage people to look after their own health rather than turn to governmental assistance. It is in accord with any legislation designed to help preserve our present non-governmental system of medicine.

12. Medical Benefits for Veterans with Non-Service-Connected Disabilities.

Despite the fact that this question will not be considered by this Congress, it is felt that the medical profession should be completely briefed on the subject.

The A. M. A. recommended that no change be made in the present law with respect to the provision of medical care for service-connected disabilities. With respect to non-service-connected cases, it recommended that except in neuro-

psychiatric and tubercular cases, responsibility for providing medical care revert to the individual or state or local government. In tuberculosis and neuropsychiatric conditions, it recommended that *temporarily*, due to shortage of facilities in certain areas, responsibility be continued at the federal level if facilities are available.

The present law provides that medical care, hospitalization and domiciliary care be allowed for all veterans with service-connected disabilities. The law further provides that such care shall be available for non-service disabilities, within existing facilities, providing they are unable to pay for such care. The law provides that the signing of a prescribed statement under oath by a veteran with non-service-connected disability, shall constitute proof of his disability to pay. There has never been any investigation of this statement of inability to pay—the law does not require it.

The provision of medical care for non-service cases was authorized about 30 years ago. Then there were only about 5 million veterans and about 16,000 VA beds, many of which were unoccupied. It was this surplus of beds that suggested the expansion to include non-service-connected cases. Today there are over 20 million veterans; about 120,000 VA beds; and a waiting list of about 20,000 veterans every month, only a few of whom have service-connected disabilities.

When the program began, the VA load consisted of about 17% non-service-connected cases. Today annual admissions and discharges approximate about 525,000, of which 85% are non-service-connected. Past VA Administrator General Frank Hines estimates that by 1975 there will be a need for 400,000 VA beds, assuming no change in the present law.

The cost of VA medical care program in 1934 was about \$17 million. In 1944 it increased to \$102 million, and last year amounted to about \$745 million. Thus, in the last ten years the cost has increased by more than 700%. Discrepancies in figures have been quoted, but all the figures and statistics used by the A. M. A. were obtained from the VA and therefore, it is logical to assume that they are accurate.

In discussing this very important problem, complete emphasis should be placed on the following specific issues:

- (1) The moral justification for the provision of medical care for veterans with non-service-connected disabilities;
- (2) The effect of the present program on civilian teaching establishments;
- (3) The resulting overlapping in federal medical facilities and an artificial shortage of physicians and allied health personnel;
- (4) The increased cost of medical care and hospitalization for the general public;
- (5) The justification for the huge federal tax burden; and
- (6) Whether veterans themselves actually desire this type of hand-out.

13. "Free" Hospitalization for Social Security Beneficiaries.

It is highly unlikely that this legislation (H.R. 8, Dingell), will receive any serious consideration at this time. However, should the President's major health recommendations be defeated, it is quite possible that this type of legislation may be revived. The report of the Commission to Study the Cost of Hospital Care recommends adoption of a program of this type.

On March 28, 1954, a meeting sponsored by the Council on Medical Service of the A. M. A. and the Council of the N. E. State Medical Societies, was held in Boston for consideration of Veterans' Affairs and Federal Legislation. Since the content of this meeting was covered by your Committee on Veterans' Affairs, it will not be included in this report.

Respectfully submitted,

CLYDE I. SWETT, M. D., *Chairman*,
WILSON H. MCWETHY, M. D.,
FRANCIS A. WINCHENBACH, M. D.,
M. TIECHE SHELTON, M. D.,
STEPHEN A. COBB, M. D.

Board of Ethics and Discipline

To the Officers and Members of the Maine Medical Association:

The Board of Ethics and Discipline in view of the confidential nature of the matters coming before it does not report on those matters. It does however seem worth-while to report that this past year the Board held four lengthy meetings and considered six cases, the seventh having been just filed but not yet considered.

Since the cases coming before this Board are in the nature of complaints against individual doctors there is a lesson to be learned from the fact that a great majority of the cases arise out of dissatisfaction over the fees charged. It is obvious that no effort has been made to learn about the financial situation of the patient in advance and no discussion has been had with the patient as to the size of the charge to be made.

A. M. A. has urged that doctors discuss fees in advance with patients. It has prepared a plaque which can be purchased from the A. M. A. offices for \$1.00, which is suitable

for the doctor's office, offering and inviting a discussion of fees with the patient.

This Board from its experience urges that doctors do purchase one of these plaques and with or without such a printed invitation discuss fees and necessary treatment with patients in advance of making charges. Such a procedure will eliminate many sources of complaints and ill will toward doctors.

In some cases considerable time and effort has been required to obtain complete data and sift out the real facts. Usually very little basis for any real grievance has been found. The complaints usually arise from misunderstanding of professional procedures and lack of frank discussion and explanation.

Board of Ethics and Discipline

HOWARD L. APOLLONIO, M. D.,
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PHILIP P. THOMPSON, JR., M. D.,
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JAMES A. MACDOUGALL, M. D.

Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Mansfield Clinic, Thayer Hospital. 3rd Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Caribou, Houlton, Lincoln, Machias, Rockland and Rumford. The Portland Clinic is open daily with a staff of 1 psychiatric social worker and 1 psychologist. The psychiatrist is in attendance on Tuesdays. The other clinics are staffed by a psychiatrist and a psychologist.

Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.

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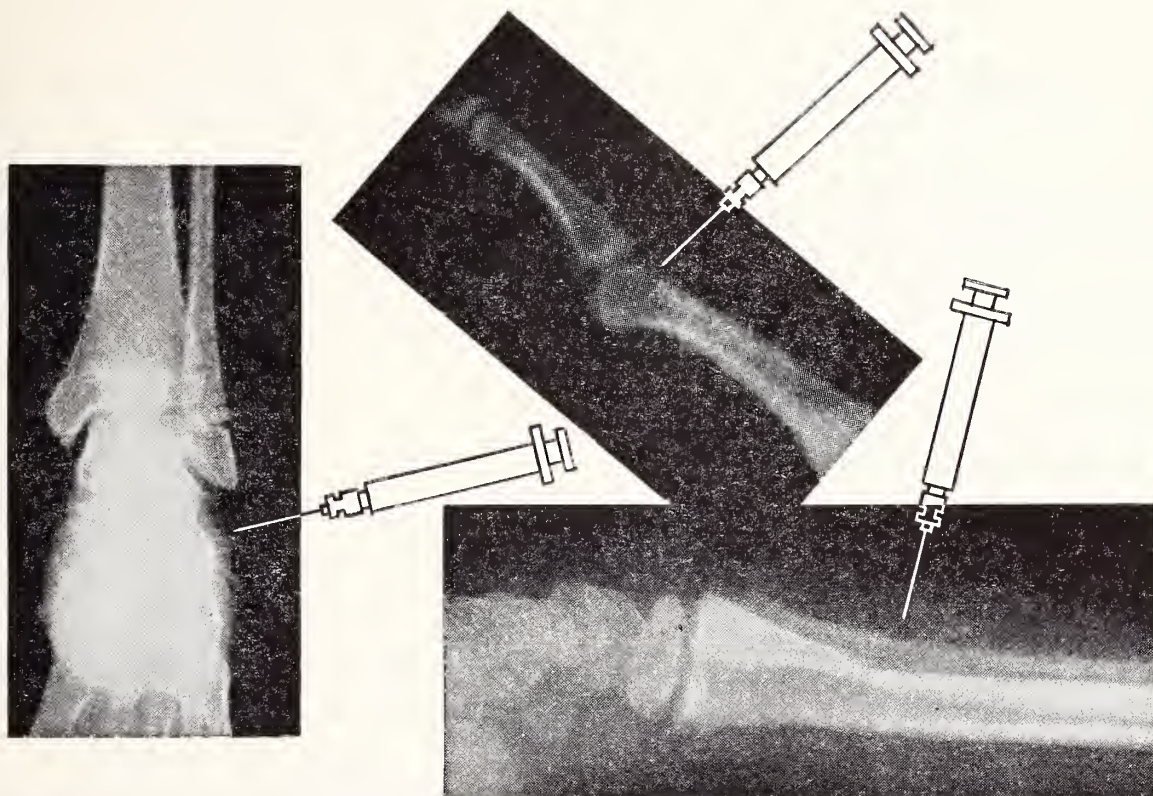
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1. MacAusland, W. R., Jr.; Gartland, J. J., and Hallock, H.: The Use of Hyaluronidase in Orthopaedic Surgery, *J. Bone & Joint Surg.* 35-A:604 (July) 1953.

2. Swenson, S. A., Jr.: Minor Surgical Aspects of Closed Wounds, *Am. J. Surg.* 87:384 (March) 1954.

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COUNTY SOCIETY NOTES

Hancock

A regular meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, Maine, on Wednesday, April 14, 1954. There were ten members and 2 guests present.

The meeting was opened by the president, Dr. Mason Trowbridge. A letter from W. Mayo Payson, Executive Secretary of the State Association, was read. Some discussion followed.

The speaker of the evening was Dr. Clarence C. Little of the Jackson Memorial Laboratories, who gave a very interesting talk on Cancer Research.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Washington

A regular meeting of the Washington County Medical Society was held in the V.F.W. Hall in Eastport on April 28 at 6.00 P. M. with twenty-three members and guests present.

After an excellent dinner put on by the V.F.W. Auxiliary, Dr. James C. Bates of Eastport, president of the Washington County Medical Society, presided at a business meeting. Dr. John Metcalf of Calais, our delegate to the Maine Medical Association, brought up several matters which provoked considerable discussion and were then voted on.

Dr. Robert J. Barrett, Jr., a Dermatologist from Bangor, was introduced as speaker of the evening by Dr. Karl V. Larson of East Machias.

Dr. Barrett spoke on some of the newer methods of treatment of skin disease. He brought out the increased amount of sensitization from the use of various skin treatments especially the antibiotics. He said that Penicillin was very useful in the treatment of many skin diseases but orally rather than topically. The same applied to the antihistamines which were very useful when given by mouth but if applied to the skin often set up a sensitivity. Some of the newer bases used to incorporate drugs were found to be very sensitizing and it was necessary in some cases to return to the use of petroleum as a base. *Cortisone* and more especially hydrocortisone are very important in the treatment of skin disease. They must be used with care. He stated that ACTH should be given periodically to constant users of *Cortisone* to prevent adrenal damage. The use of Grenz rays has made X-ray therapy safer and given it wider usefulness. This was followed by some discussion. It was voted to hold the next meeting on May 20 in St. Stephen, N. B.

The Ladies' Auxiliary of the Medical Society were present for dinner and held a meeting.

KARL V. LARSON, M. D.,
Secretary.

York

A regular meeting of the York County Medical Society was held at the Bauneg Beg Country Club at Sanford, Maine, on Wednesday, May 12, 1954. There were twenty-four members and 2 guests present.

A social hour was held previous to the serving of a fine steak dinner.

Recent Advances in the Diagnosis of Cardiac Diseases was the subject presented by Dr. Ralf Martin of Portland. This was a most interesting and instructive talk.

The summer outing is to be held at the residence of Dr. Leandre R. Charest at Old Orchard on July 14, 1954.

It was voted to hold the October meeting at the Stardust in Kittery with Dr. Stephen A. Cobb as a committee of one in charge.

C. W. KINGHORN, M. D.,
Secretary.

New Members

Aroostook

Frederick C. Vogell, M. D., Caribou
Rino Fournier, M. D., Madawaska.
Thomas V. Brennan, M. D., 208 Main St., Presque Isle.
Rudolph Junda, M. D., Caribou.

Cumberland

Peter W. Bowman, M. D., Pownal State School, Pownal.
Frederick B. Clark, M. D., 131 State St., Portland.

Harris Hinckley, M. D., 331 Cottage Rd., South Portland.
Everett Orbeton, M. D., 131 State St., Portland.
Albert A. Poulin, Jr., M. D., 22 Arsenal St., Portland.
George F. Sager, M. D., 22 Arsenal St., Portland.
Stanley B. Sylvester, M. D., 22 Arsenal St., Portland.
William F. Taylor, M. D., 22 Arsenal Street, Portland

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The Pine Tree Society's Pine Tree Camp



The Pine Tree Society's Pine Tree Camp at North Pond, Rome, opens June 27th for its 10th season. This camp is for Maine's handicapped children between the ages of 8 and 16. Hundreds of children have benefited from eight weeks of camping where they have been helped by a large staff of counselors, physical, occupational and speech therapists. The doctor referring the child recommends the therapy he or she needs, and an orthopedist and pediatrician visit the camp periodically. Campers must be ambulatory and able to take care of their

personal needs. Parents are asked to pay what they can afford, but no child is refused if he or she can be helped at camp. Do you know of a child who could benefit from a summer at camp where he can have fun and be helped to overcome his handicap? Any referrals can be sent directly to Pine Tree Society for Crippled Children and Adults, Inc., Bath, Maine. The 1954 season is from June 27th to August 27th.

TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

A Comparative Analysis of the Post-Discharge Experiences of Tuberculous Patients

By Sol L. Warren, Ph.D., The American Review of Tuberculosis, February, 1954.

Vocational rehabilitation, as an organized program of public aid to the physically handicapped, had its inception in this country some thirty-odd years ago. There is general acceptance of the program, yet its definitive values remain essentially unconfirmed. The recognition of the need for systematic research in this field prompted the evaluative study described in the present report.

The objectives of the study were: to discover whether differences could be discerned between a group of persons who participated in a vocational rehabilitation program and a comparable group who did not participate in such a program; to determine, if any such differences were found, their nature, extent, and significance to the individual, the rehabilitation agency, and the community.

The most important characteristic of the study was its method of approach in setting up controlled conditions. Scrupulous attention was given to the three primary demands of scientific analysis in causal-comparative research. These include: verification of the comparability of experimental and control groups prior to the introduction of the experimental variable; maintenance of uniform conditions during the experiment; and the demonstration by valid statistical techniques of the significant differences between the groups.

Two hundred and fifty-seven patients discharged from Municipal Sanatorium of New York City at Otisville, New York, during 1942 and 1943 were selected because they met the following criteria: they were first admissions to the hospital who had been discharged with medical consent as having arrested tuberculosis; they were all on four-hour activity tolerance, had favorable prognoses, and needed rehabilitation assistance; they were of equivalent economic status; they had been processed through the sanatorium rehabilitation program.

Following discharge, these patients separated into two groups as some availed themselves of the services provided by the state agency whereas others did not. On the fifth anniversary of discharge from the sanatorium, both groups were interviewed. Additional data were obtained from clinics, hospitals, physicians, social agencies, friends, relatives, and employers. Of the 257 patients selected for the study, 240 were located and included. The remaining 17 could not be found or refused to cooperate. Of the 240 subjects studied, 79 participated in the state agency's program while 161 failed to take part.

The opposing groups were compared with respect to their pre- and post-discharge characteristics and experiences. Criteria of comparison included factors commonly associated with physical, emotional, social, economic, and vocational adjustment.

A pre-discharge comparison of the participating and non-participating groups disclosed their equivalence with respect to every criterion measured. Among these were such factors as age, sex, color, religion, place of birth, and citizenship status. Socio-economic factors such as marital status, number of dependents, source of income, public welfare experience, and contacts with social agencies, the highest school grade completed, in-sanatorium activities, psychological test results and personality characteristics were also equated. Under physical data, the comparison covered family and personal tuberculosis history, the clinical status, activity tolerance, and prognosis. Included among the vocational factors were length of work history and number of occupations and jobs held. A detailed comparison was made of the last pre-sanatorium job.

On the basis of the pre-discharge analysis, it was concluded that, at the point of discharge from the sanatorium, the par-

ticipating and nonparticipating groups were comparable in every meaningful respect. This equivalence provides a valid basis for conclusions bearing on the post-discharge experiences of the groups.

The post-discharge analysis compared the groups with respect to all pertinent factors mentioned above plus many others. The findings disclosed more favorable outcomes for the participating group in virtually every aspect investigated. Only the more significant ones are summarized here.

The participants exhibited considerably lower mortality and relapse rates than the non-participants. Although of comparable physical status at the time of discharge, at follow-up examination those who had received rehabilitation assistance were uniformly better off than their non-participating counterparts. Although both groups earned approximately the same wages in their last pre-sanatorium jobs, the participants entered initial post-discharge jobs at decidedly lower wages than did the non-participants. When wages were recorded at the end of the five-year period, the participants had forged ahead quite conclusively.

Without presenting details, it is recorded here that the jobs held by the participants were almost invariably better than those held by the non-participants. Such items as days and hours of work, total earnings, number of wage increases and promotions, job tenure, sick-leave provisions, employer awareness of the tuberculous background, and absenteeism were considered.

On the basis of the findings disclosed by the present study, it may be concluded that participation in the vocational rehabilitation program produced consequences which were definitely significant to the persons who participated, to the rehabilitation agency which provided the services, and to the community as a whole.

In terms of individual experiences, participation in the program produced certain specific outcomes. In encouraging adequate convalescence and attention to medical advice, in discouraging premature resumption of employment, and in promoting suitable vocational objectives, it contributed significantly to the attainment and maintenance of normal health. In helping by supportive and tangible assistance to overcome the psychologic trauma associated with tuberculosis it contributed to the restoration of normal life patterns. In furnishing sound occupational guidance, adequate job preparation, placement assistance, and close supervision of employment, it contributed to satisfactory vocational experience in occupations commensurate with mental levels, interests, aptitudes, education, work background and physical capacities. By providing useful skills in remunerative fields it contributed to the restoration of financial independence. In creating an advantageous physical, emotional, vocational, and economic climate, it contributed to the assumption of the community and family obligations which are essential to social and personal adjustment.

The findings substantiate the economic soundness of the rehabilitation program and provide the basis for future development and expansion.

Finally, in terms of community involvement, the findings are significant because they provide facts which should enlighten the public and management regarding the proficiency, stability, and vitality of ex-tuberculous workers properly placed. They demonstrate the practical and tangible benefits to the community in terms of tax returns and purchasing power and in savings in welfare and hospitalization costs. They point the way to a happier citizenry through the promotion of economic self-sufficiency, physical and emotional well-being, social and vocational adjustment, and general personal contentment.

(The printing of Tuberculosis Abstracts is made possible by the cooperation of your local tuberculosis and health association.)

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FATAL INFECTIONS COMPLICATING ANTIBIOTIC THERAPY

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Within the past two or three years it has become apparent that the constantly increasing use of antibiotic agents is being roughly paralleled by a constantly increasing incidence of some syndromes which obviously are of infectious character but the manifestations of which have heretofore been comparatively unfamiliar. Of these manifestations the most striking are the rather vague onset, the rapid and fulminating course, and the high incidence of fatal outcome. We have no contribution to the knowledge of the basic, biological phenomena of such conditions to offer. Our intentions are limited to the two-fold objective of reminding physicians, anew, that the use of the antibiotic agents is capable at times of initiating a very serious complicating illness, and of reporting and commenting upon the courses of three patients treated in this hospital during recent months.

BASIC BIOLOGICAL PRINCIPALS

Several explanations have been offered to account for the way in which the complete control of a given primary infection may be followed immediately by the development of another infectious disorder. These include such possibilities as the following: (1) The rapid eradication of sensitive organisms, during antibiotic therapy, permits free proliferation of certain resistant organisms, some of which may nor-

mally occur only in small numbers. Such overgrowth becomes significant if the organisms are capable of actively attacking some specific site or tissue, or of invading the blood stream or otherwise acting as pathogens; (2) Antibiotics in sub-lethal concentrations may stimulate the growth of some infectious organisms,—a phenomenon which has been observed *in vitro* with penicillin; (3) Alterations of various tissues or functions may occur as side-effects of the agent (e.g., the diarrhea which occurs not infrequently), and thereby the patient is somehow made more vulnerable to the effects of further new insults.

We feel that the first of these explanations is by far the most reasonable, for in the natural world any acute disruption of a state of equilibrium, which exists whenever mutually-contending organisms are forced to inhabit a common environment, is almost invariably followed by consequences with some far-reaching and unfortunate aspects. Smith¹ has described the way in which this elementary biological principle is demonstrated by the use of antibiotic agents. He states that, as a result of long evolutionary processes, a nice balance has been achieved between the human organism and the complex array of microbic forms with which man is inescapably associated. Such a state of balance is essential to the normal, satisfactory existence of all the forms of life involved; it permits the bacterial elements to survive and to reproduce their respective species, while at the same time man, normally, is quite undisturbed by their presence and activities. However, the several

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elements which constitute this microcosm are by no means living in a state of peace with one another. On the contrary, a bitter inter-germ war is forever being waged. Gram-positive cocci are continually contending for survival with their natural foes, the gram-negative bacilli, and *vice versa*. In turn, both groups join forces in a strange alliance and make common cause in another unending battle against their mutual foes, the yeasts and mold-like fungi. Normally the prevailing status of this many-sided battle is a "draw", but always the balance is somewhat delicate and precarious. Should it suddenly be disturbed by a rapid reduction in numbers and effectiveness of one or more of the contending forces, the conditions which result are favorable for the survivors (1) to multiply unopposed in their normal habitats, wherein they have been kept properly subdued, hitherto, and (2) frequently to invade other regions from which their antagonists have previously barred them.

ANTIBIOTIC THERAPY AND BACTERIAL EQUILIBRIUM

All effective antibiotic therapy is, inevitably, accompanied by some degree of this sort of disturbance of bacterial equilibrium; the trend is determined by the specific properties of the antibiotic agent, among other factors. Penicillin acts most strongly upon gram-positive cocci and therefore it tends, directly or indirectly, to promote growth of many gram-negative bacilli. Streptomycin tends, in general, to suppress gram-negative bacilli more effectively than it suppresses cocci; therefore it tends to promote overgrowth of at least some varieties of the latter. When used together, these two agents tend to produce the sum of their respective effects and suppress both of these major types of bacteria, except those forms which possess resistive powers; thereby conditions develop which are favorable for the mold-yeast organisms to become dominant. This last condition tends, also, to result from the use of other "broad spectrum" agents, such as Aureomycin, Terramycin and chloramphenicol.

There obviously is no doubt of the capacity of the human organism to withstand, without significant detriment, shifts of bacterial balances of power of these types, provided they are not of long duration. It has now become almost equally obvious, however, that if such derangements of microbic balances are maintained for more than a few days they become capable of initiating clinically significant disorders. Such complications may become manifest at one or more principal sites; those most often affected in this way are mouth, bronchi and lungs, esophagus, intestines, urinary tract and vagina. Of these, the viscus most frequently and most severely affected is the intestine, as might be expected from the fact that its lumen normally teems with many kinds of microbes.

Although the antibiotic agent, itself, is the factor

directly responsible for the development of these infectious complications, it is highly probable that deviations from normal health on the part of the patient act to predispose to their becoming severe. Most apparent of such deviations from health are the post-operative state and the state of decreased bodily vigor which accompanies or follows most chronic illnesses.

CASE REPORTS

Case 1—J. C. S., aged 73, admitted on 19 August, 1953.

He was admitted from another hospital, where he had been treated for 4 days for an illness of 3 days' prior duration. This had been diagnosed as pneumonitis and penicillin had been used from the onset, in dosages which were not ascertained. For 24 hours prior to admission here he complained of increasing lower abdominal distress and tenderness, associated with some vomiting and diarrhea of loose, dark stools. X-ray examination disclosed no pulmonary disease and the patient was transferred here because of the possibility that abdominal surgery might be indicated.

He was noted to be an elderly, somewhat dyspneic and distinctly ill-appearing man, but temperature was normal, pulse was 80, white blood cell count was 9,600 with 78% neutrophils, and red blood cell count was 3,950,000. Five hours after entry he still was unable to void a "specimen" for urinalysis, and catheterization disclosed an empty bladder. There was bilateral tenderness of the lower abdomen, without any really prominent or localizing signs. It was concluded that the patient might well have appendicitis, and that the usual findings thereof were obscured because of his age and as a result of a week's penicillin treatment. He was operated upon as an emergency, 8 hours after admission. All of the abdominal viscera were essentially normal, but appendectomy was done. For 2-3 hours immediately post-operatively, the patient was somewhat restless and confused and showed a distinct hypotension (B.P. 60-70/40); then he gradually improved during the night. He passed a liquid stool incontinently. The next morning he appeared to be reacting normally and he was ambulated briefly. During the day, however, further changes were toward gradual deterioration rather than improvement. He was anorexic and confused, and total urine-output for the day was but 10 c.c. Throughout the second postoperative day he was restless and became increasingly more delirious; he perspired profusely during the evening and at midnight his temperature was 102.4° F. (R). By 8 A. M. of the next (third postoperative) day, it had increased to 107.4° F. (R); pulse was then 148 and blood pressure was 60/?. He was comatose. Twitchings began and soon became continuous. The blood urea N was 88.7 mg. He expired at noon, with a terminal temperature of 108.6° F. (R).

The total amounts of antibacterial agents which this patient received during a 3-day period of treatment were: (1) Penicillin, 3,000,000 units, plus an unknown amount given elsewhere prior to his admission here; (2) Streptomycin, 5.0 grams; (3) "Thalamyd", 12 grams.

At autopsy the principal abnormalities were found in the intestinal tract and kidney. The entire bowel was dilated and atonic; the entire small bowel was thickened, its serosa was swollen and hyperemic and its lumen contained a large quantity of brown fluid. The mucosae of ileum and distal jejunum, also, were edematous and hyperemic, and showed many small erosions but no real ulceration. The right kidney was absent (following surgical removal for cystic disease several years previously). The left kidney weighed 160 grams; it was soft and the cortex bulged from the cut surface when it was sectioned. The calices were widened and showed indefinite areas with a gray, opaque appearance. The renal arteries were prominent.

Microscopically, the distal small bowel presented the characteristic findings of acute enteritis—mucosal edema and hyperemia and subserous infiltration of monocyctic and neutrophilic cells. (Fig. 1) The mucosal erosions were apparent. In the remaining kid-

ney there were the changes of acute nephrosis, with the principal involvement in the proximal convoluted tubules. These showed cloudy swelling and fatty and hydropic degeneration of the epithelium present uniformly in all sections. The basement membrane was intact. The distal tubular elements were secondarily affected, and a few glomeruli were fibrosed and hyalinized. Other findings were pulmonary edema, edema of cerebral cortex, coronary sclerosis and multiple small areas of myocardial fibrosis.

No cultures were made in this case, since at the time of death and autopsy the real nature and significance of the problem at hand were neither recognized nor suspected.

Case 2—E. J. A., aged 69, admitted on 25 August, 1953.

He came to the hospital for treatment of "pernicious anemia" of several months duration and of an acute rectal abscess. The red blood cell count was 2,240,000; hemoglobin was 6.2 grams and hematocrit was 23. The anemia was definitely of a "secondary" type. The abscess was drained surgically and underwent normal healing within a few days. Anti-anemic therapy, including several transfusions, increased the hemoglobin to 10.4 grams by 14 September, with hematocrit of 38. In the course of studies to establish a cause for the anemia, X-ray examination disclosed a lesion of the cecum which was assumed to be a carcinoma. This indicated surgical treatment as soon as the patient's condition improved enough to permit his being operated upon without undue risk, and eventually this was scheduled for 16 September.

During the 9-day period following his admission, while the rectal abscess was being treated, the total amounts of antibiotic agents which this patient received were: (1) Penicillin, 7,200,000 units; (2) Streptomycin, 9.0 grams.

OPERATION

Prior to operation, sulfasuccidine was administered in daily total dosage of 8.0 grams over a 6-day period. Operation on 16 September disclosed the expected carcinoma of the cecum, and resection of distal ileum and right colon, with immediate ileo-transverse colostomy, was accomplished without unusual incident. Postoperatively, the patient's course was entirely satisfactory through the second postoperative day. Antibiotic treatment which provided daily total doses of 600,000 units of penicillin and 2.0 grams of Streptomycin was instituted on the day of operation and, with an occasional slight variation, was maintained throughout the entire subsequent course.

On the third postoperative day the patient was unusually restless and noisy and began complaining of vague, generalized abdominal distress. The abdomen was distinctly distended. During the succeeding ten days all of these conditions steadily became more

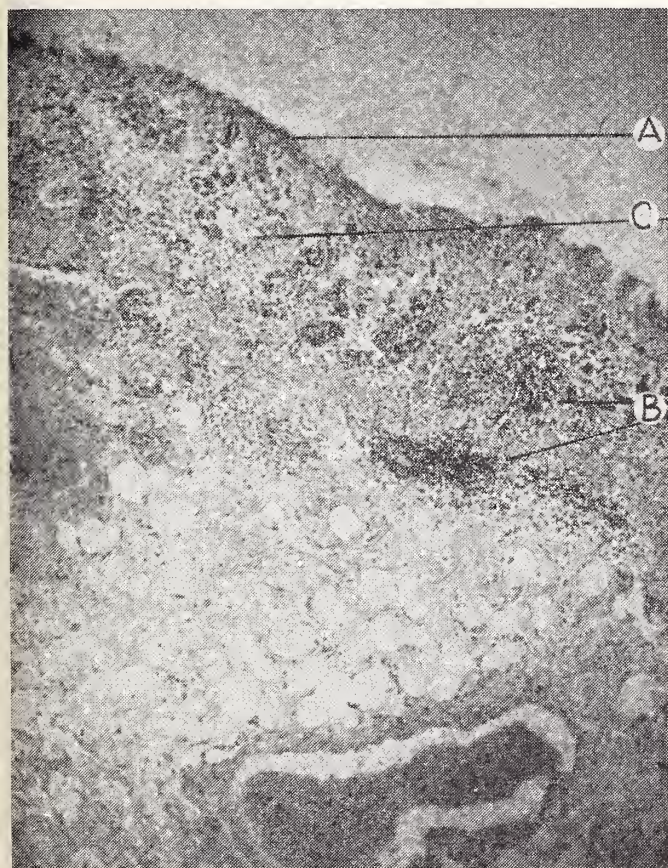


Figure 1. Photomicrograph of section of ileum, Case 1.

Note: (A) Necrotic degeneration and sloughing of mucosal epithelium; (B) Extensive submucosal collections of mature round cells, indicative of a rather intense enteritis; (C) Edema of mucosa and submucosa.

troublesome and intractable. It was notable that the abdominal distension increased and became extreme, even though the patient continued to pass comparatively frequent and copious stools, as well as large amounts of flatus. After the 9th postoperative day there never were less than 10 dejections daily. Typically, the stools were a thick, dark, foul liquid, containing varying amounts of mucus. After the 6th postoperative day, the patient showed an almost constant tendency toward the development of a shock-like condition of circulatory failure, and had not this been more or less continually combatted with "Levophed" infusions it is highly probable that it would have progressed to irreversibility and death within a few hours. Daily temperature elevations to 102-103° F. occurred. After the first postoperative week the patient was confused much of the time, and when intervals of lucidity intervened they were characterized by an attitude of abnormally marked anxiety and apprehensiveness. Later he lapsed into a wholly disoriented state, during which there were alternating delirium and lethargy.

On the 7th postoperative day, the blood urea N was 140 mg.; on the 10th day it was 300 mg.; thereafter it varied between 110 and 150 mg. Leucocytosis was constant after the 7th postoperative day, with white blood cell counts varying between 13,000 and 19,000, and the percentages of neutrophils varying between 85 and 91. From the 12th postoperative day on, it was noted that the lips and gums appeared to be very sore and that they tended to exude a bloody fluid.

After the 7th postoperative day, the plan of antibiotic treatment already in effect was supplemented by the addition of 1.0 gram of Terramycin daily, since it was apparent that "infection" was still a prominent element in his steadily worsening condition.

In spite of the continuing frequent passages of large, liquid stools and large volumes of flatus, the abdominal distension had become so extreme by the 13th postoperative day that it was decided that laparotomy was mandatory, to determine whether or not the patient had developed general peritonitis as the result of a breakdown of the anastomosis and fecal contamination of the peritoneal cavity. The second operation, on 29 September, disclosed nothing more than marked, generalized bowel distension, characteristic of a paralytic ileus. Subsequent to this exploration the course was one of unremitting decline. The patient became comatose; muscle twitchings occurred intermittently; a thick and foul fecal fluid drained off through the Miller-Abbott tube; and death ensued on the first postoperative day.

In connection with the surgical treatment of the cecal lesion (and in addition to what had been used in connection with treatment of the abscess during the first days of hospitalization) the total amounts of

chemotherapeutic and antibiotic agents which this patient received were: (1) Preoperatively, during a 6-day period, sulfasuccidine, 48.0 grams; (2) Postoperatively, during a 15-day period, (a) penicillin, 10,900,000 units; (b) Streptomycin, 26.0 grams; (c) Terramycin, 6.0 grams.

POST-MORTEM FINDINGS

At autopsy, residuals of an adequate right colectomy and anastomosis of ileum to transverse colon were found. (Postoperatively, the tumor had already been diagnosed as adenocarcinoma, grade II.) The suture line was intact and there was no evidence indicative of leakage having occurred. The entire small bowel was atonic and distended; microscopically, it showed edema and hemorrhage of the mucosa, but no necrosis or ulceration. There was an hemorrhagic esophagitis. The right kidney weighed 290 grams, the left, 360 grams. Grossly, their appearance was characteristic of nephrosis, and this impression was verified microscopically. (Fig. 2) The lungs and cerebrum were edematous. Cultures of the contents of the small intestine showed complete absence of coliform bacilli.

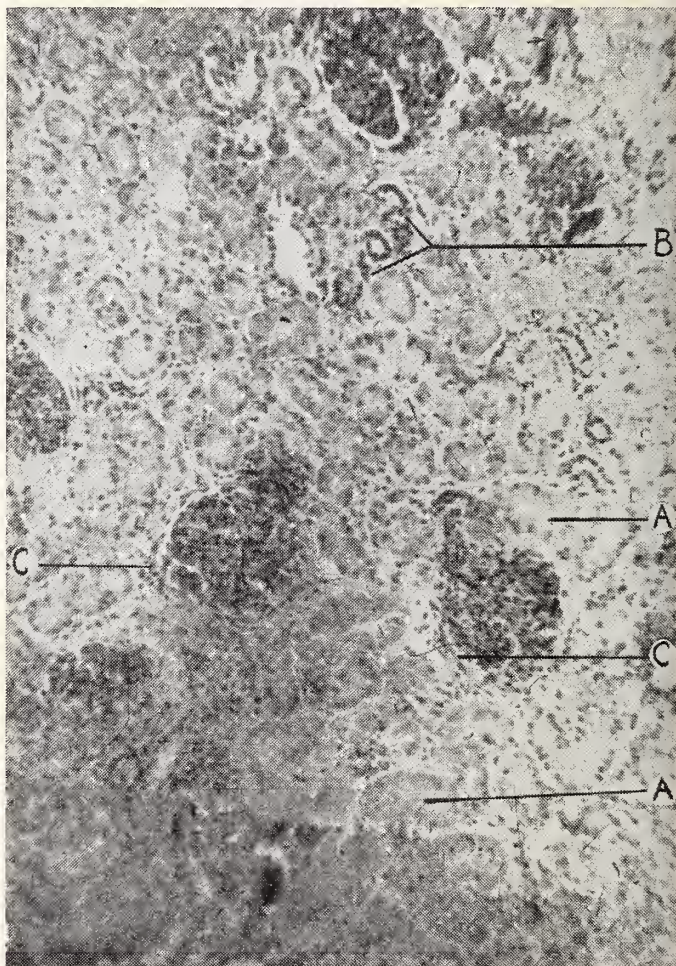


Figure 2. Photomicrograph of renal tissue, Case 2.

Note: (A) Cloudy swelling and disintegration (necrosis) of epithelium of the proximal portions of the convoluted tubules; (B) Essentially intact state of epithelium of the few distal tubules present at this level; (C) Inflammatory reaction around glomeruli.

Case 3—E. P. T., aged 29, admitted on 23 January, 1954.*

His presenting complaints were jaundice, nausea and swelling of abdomen and feet, of about two weeks' duration. Two years before he was hospitalized for 3 months for treatment of "infectious hepatitis." Subsequently he drank excessively most of the time. He presented marked icterus and extreme anasarca and appeared semi-moribund. A diagnosis of acute hepatic necrosis superimposed upon chronic cirrhosis was indicated by extensive laboratory studies, details of which we shall not attempt to present here.

Intravenous therapy was instituted immediately to provide fluids, glucose, electrolytes, vitamins, ACTH and human serum, with frequent laboratory checks to control the amounts of each. After one week of this regimen the patient recovered full mental faculties and all signs indicated a trend toward general improvement.

He received 1.0 gram of Terramycin on the first day, and during the ensuing days he received 1.0 gram of Aureomycin daily, administered intravenously in doses of 0.5 gram, b.i.d. On the 6th day of treatment he began to have diarrhea and thereafter his stools invariably were loose and usually greenish in color and contained gross amounts of mucus. Two to six bowel movements occurred daily, and many of them were described as "large" in the nurses' notes. Large amounts of flatus were frequently expelled, also. In spite of such seemingly free evacuation of the bowel, abdominal distension and subjective distress steadily increased and eventually the patient developed extreme aversion to eating because he feared the possibility of aggravating the "bloating." Abdominal tympany indicated that the distension was caused more by gas than by ascites.

The alimentary aspects of his entire course consisted merely of continued progression of the initial symptoms and signs. After the 15th day, the stools contained increasing amounts of blood. After the 8th day episodes of confusion became more frequent and during lucid intervals the characteristic attitude was one of extreme anxiety. Although oral intake of both food and water was relatively meager, frequent and sizeable bowel movements continued; after the 15th day there were 5 or more stools daily, although several contained little but mucus. During this time the patient declined in vigor; he perspired profusely; he tended to lapse into semi-stupor; circulatory efficiency was failing and on the 17th day circulatory collapse seemed imminent. He expired on 10 February, the 18th day of treatment.

The total amounts of antibiotic agents which this patient received, over an 18-day period, were: (1) Terramycin, 1.0 gram; (2) Aureomycin, 17.0 grams;

(3) "Ilotycin", 1.0 gram,—all administered intravenously. (The last-named agent was not used until the agonal stage and it certainly could not have significantly affected the course.)

POST-MORTEM FINDINGS

At autopsy, several liters of clear, yellow fluid were present in the peritoneal and each pleural cavity. The liver showed atrophic cirrhosis, upon which was superimposed a green, necrotizing hepatitis. It weighed 1210 grams. There were multiple small abscesses in heart, lungs and kidneys, indicative of the existence of bacteremia for several days prior to death. There was an hemorrhagic pericarditis. The heart weighed 400 grams; the myocardium was soft and reddish-purple in color, and showed numerous small yellow abscesses surrounded by hemorrhagic zones. The right kidney weighed 280 grams; the left 275 grams. Many small yellow abscesses were present throughout their substance. The lungs were edematous, and their lower lobes contained small abscesses. There was cortical hemorrhage in the right adrenal. The spleen was soft, swollen and typically "septic" in appearance. There were no significant changes within the brain. Microscopically, the intestine showed edema and multiple foci of hemorrhage of the mucosa.

Samples of venous blood were taken for culture shortly before the patient died and from the heart cavity at autopsy. Both yielded pure cultures of *Micrococcus pyogenes* (*Staphylococcus*), var. *albus*, hemolytic and coagulase-positive. The same organism developed, in pure culture, from a sample of the intestinal contents obtained at autopsy.

DISCUSSION OF PATHOLOGICAL ASPECTS

From a pathological point of view, the last case was one of atrophic cirrhosis upon which were superimposed necrotizing hepatitis and staphylococcal septicemia, with multiple pyemic abscesses secondary to the latter. Death was attributable to heart failure which resulted from both the direct myocardial involvement and the effects of the general toxemia.

In each of the first two cases, the initial lesion was that of an acute bacterial enteritis; secondarily, acute nephrosis ensued and terminated in renal failure. Cerebral and pulmonary edema and pleural effusion resulted from the renal "shut-down." The clinical course of each patient was marked by hyperpyrexia, hypotension, eventual circulatory collapse, and renal failure. In these cases the evidence all points to an overgrowth of toxin-forming bacteria within the intestinal tract as the initiating factor. Absorption of toxin into the blood stream and its subsequent concentration and resorption in the convoluted renal tubules, especially in their proximal portions where concentration of the toxin was maximal, led to the

* We are indebted to R. L. Ohler, M. D., Chief of Medical Service, for permission to report this case from his service.

cloudy swelling and hydropic degeneration noted in these tissues. This damage, in turn, impeded normal resorption of electrolytes, caused retention of nitrogenous materials and, possibly, stimulated release of anti-diuretic hormones. The vasomotor collapse which occurred is ascribable to the action of the toxin in impairing effective muscle-functions of both the arterioles and the myocardium. In many respects these cases simulated, in both clinical and pathological aspects, those seen in food-poisoning caused by toxin-forming bacteria. Incidentally, in this latter condition, Staphylococci are the offending organisms most frequently found. Terminally, anoxemia secondary to circulatory collapse aggravated both the renal and the circulatory damage.

In the third patient, complete eradication of most of the normal bacterial types from the intestine led to excessive proliferation of a strain of hemolytic, coagulase-positive Staphylococci which were resistant to the antibiotic agents being used. Absorption of these organisms into the blood stream — which, perhaps, was facilitated by the profound derangement of the liver—gave rise to the typical sequelae of staphylococcal septicemia and multiple visceral abscesses. In this case, septicemia was the primary cause of death, and renal failure was of secondary importance.

DISCUSSION OF CLINICAL ASPECTS

In viewing these three cases retrospectively, it is evident that many outstanding signs and symptoms were common to all. Our own observations, together with those contained in several published reports suggest that the clinical course of this syndrome tends to pass through three succeeding stages, each of which is fairly characteristic although these stages are admittedly based upon somewhat arbitrary lines. The outline given in Table I represents the sequence of events which is most frequently encountered in this syndrome.

We do not suggest that the cases here reported are unique, or even rare, since they do not significantly differ from many others already described.^{2, 3, 4, 5, 6} From information now available in medical literature, it is apparent that a syndrome, characterized by acute enterocolitis and toxemia, occurs not rarely during continued antibiotic therapy, regardless of the agent used. From the same available sources of information it is evident, also, that the manifestations of these complications are sufficiently typical as a rule to permit their easy recognition by the physician,—provided he is aware of their possible occurrence. (Obviously, this *proviso* is essential for the successful solution of any diagnostic problem.) Our own experience has

TABLE I
CHARACTERISTIC FINDINGS DURING COURSE OF "CHOLERIFORM SYNDROME"

<i>Signs and Symptoms</i>	<i>First (or Prodromal) Stage</i>	<i>Second (or Determining) Stage</i>	<i>Third (or Terminal) Stage</i>
Abdominal distress	Vague, nondescript and intermittent	More or less continuous; may be attributed to co-existing distension	Constant, but tends to be masked by co-existing impairment of consciousness
Abdominal distension	None or mild	Fairly constant; gradually increasing	Unremitting, becoming extreme
Anorexia	Mild	Increasing	Total
Nausea, vomiting	None, or mild nausea	Intermittent but increasingly frequent	Severe, unless controlled by intestinal-tube drainage
Fever	None or minimal (not over 1 F.)	Daily temp. elevations to 100° F. or more; gradually increasing	Continuous; terminally, may be extreme (to 108° F. or more)
Leucocytosis	None or minimal	Usually w.b.c. 10,000 or more, with pmn's increased to 80% or more	Same, with terminal tendency toward decrease
Bowel function	Nothing typical	Increasing frequency of movements; excessive flatus	Frequent passages of feces and gas; usually 5 or more movements daily
Stools	No typical change	Loose, foul, large in amount; mucus present Amounts of fecal discharges throughout appear to be out of proportion to amounts of food ingested	Same characteristics becoming increasingly prominent; often some gross blood, also
Psychic state	More or less of vague "bellyaching"	Marked restlessness; alternating confusion and lucidity, with anxiety marked during latter	Conscious-anxious states alternating with delirium or stupor; eventual lapse into coma
Renal function	Probably no change	Progressive impairment; increasing N-retention	Severe impairment; anuria; azotemia
Circulatory status	Unchanged	Increasing hypotension; constant tachycardia	Progressive increase of shock-like failure
Beneficial effects of continuing same anti-biotic agent	NIL	NIL	NIL

proved its importance in dealing with this specific problem. It was not until the paper by Fairlie and Kendall⁴ appeared, shortly after the death of our first case, that any serious thought was given to the possibility of antibiotic complications. However, with the realization that such unfortunate sequelae can occur, we were able to see that this concept reasonably and satisfactorily explained a course otherwise quite inexplicable. If earlier we had become fully convinced that such occurrences as these are entirely possible, at least one of these fatalities might have been avoided. We are sure, too, that most physicians prefer to gain "awareness" of catastrophic possibilities from others' experiences, rather than gain it through their own.

It should be mentioned, also, that these three fatalities do not, actually, represent all of the cases in which we have observed complications attributable to overgrowth of resistive organisms developing during antibiotic treatment. Some cases have been detected with findings typical of the prodromal stage, while there have been a few whose symptoms progressed to the intermediate stage before their significance was appreciated. In all such instances discontinuation of the antibiotic treatment is followed by prompt regression of the complicating symptoms. There is still another complication of antibiotic treatment which occurs so frequently that it has come to be virtually ignored, apparently. This is the development of a stomatitis, generally resembling "thrush", of varying degrees of severity and attributable to overgrowth of *Monilia* and/or similar organisms. Indeed the occurrence of some sort of new and refractory infectious disorder after one week of intensive antibiotic therapy is sufficiently frequent to suggest that the prolonged use of any of these agents, unless it is controlled by constant and alert observation, is potentially a hazardous practice.

Physicians trained in the era which preceded the present one, — with its ubiquitous chemo- and antibiotic therapy — can probably still recall, if they wish to do so, that the great majority of the patients whom they then treated for the ordinary surgical or traumatic conditions or infectious diseases, almost always recovered without specific antibacterial treatment. But now rapidly becoming ascendant in Medicine is another generation, irreversibly indoctrinated in the belief that victory over an infectious process, existing or potential, is scarcely possible unless one or more of the antibacterial agents is used. It has even become common usage to administer these agents when there are no evidences of infection whatever, on the theory that some sort of infection may thereby be kept from developing later. This practice is exemplified by the use of antibiotics in connection with surgery on cases of ordinary hernia, appendicitis or hemorrhoids. Here the only anti-bacterial result which can be achieved is upon the normal organisms

of the individual, and it is by no means established that benefits are to be derived from simply disarranging normal bacterial balances.

The contemporary physician's belief that antibiotics are indispensable in treating all infections is constantly being reinforced by an incessant barrage of insistent propaganda emanating from competing manufacturers of these products. It is advisable to recall that the primary and ultimate objective of any advertising effort is to increase sales of the product; education is of necessity a consideration of secondary importance.

Thus, under the combined influences of current medical training, prevailing practices, voluminous propaganda and even, at times, patients' insistences, there has developed among most physicians an attitude of therapeutic exuberance with respect to antibiotic agents. That such enthusiasm can readily suppress the fear, or even the thought of hazardous effects is demonstrated by the very three cases which we have just reported. Even after the first case provided the warning, two other patients subsequently followed essentially the same course.

Probably errors of this kind, heretofore, could not be fairly regarded as negligence, since no clear understanding of their true nature emerged until recent months. However, the time is probably not far distant when such fatalities must inevitably be adjudged as due to negligence. Perhaps, the sooner such a time comes, the better it will be for physicians and patients alike.

SUMMARY AND CONCLUSIONS

Our principal aim in this presentation has been to give further emphasis to comparatively unfamiliar, but extremely serious and not infrequent types of infectious disorders which occur as complications of antibiotic treatment. We do not intend, nor are we qualified to proffer advice or to suggest criteria for choosing or using any one of the several antibiotics now available. However, certain facts have been firmly established by numerous reports in recent medical literature; and these facts are of such universal importance that any physician, regardless of his particular specialty, can fittingly review them.

Disconcerting or unwelcome though they may be to medical practitioners, the following facts must now be regarded, practically, as medical axioms: (1) Many infecting organisms are not suppressed by antibiotic agents; (2) Many organisms rapidly acquire the ability to resist and survive the effects of antibiotics, and the incidence of such powers of resistance tends steadily to increase, from year to year; (3) Ordinarily, the administration of antibiotic agents is not only unwise but is actually unjustified, unless the pathogenic organism has been defined and its particular sensitivity-resistance properties have been determined; (4) The more seriously ill the patient, the more urgently needed is full definition of

the responsible organism(s); (5) Premature, indiscriminate use of antibiotics usually makes it later impossible to secure the bacteriological evidence upon which any successful plan of antibiotic treatment depends; (6) The continuation of antibiotic therapy after one week of adequate dosage is seldom either advisable or beneficial; (7) Continuation of antibiotic therapy, when no reduction of infectious manifestations is evident after one week, will frequently cause the physician to have on his hands a patient more febrile and critically ill than he was originally; now and again there will be a fatality from such an error of commission.

At the present time, the whole field of antibiotic therapy resembles, in many respects, a desert upon which neither roads nor milestones can be permanently established. Its every aspect is constantly shifting, under the impacts of every dose being used and of every new agent being developed. Poth,⁷ one of the pioneer workers in the field, summarizes this state of affairs as follows: "It is most inconvenient that the aspects of intestinal antisepsis are so changeable, as they are in the entire field of antibacterial therapy. What is fact today must be modified tomorrow, because the variables will have changed again. No

sooner is an effective antibacterial agent found than new groups of resistant variants appear."

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TREATMENT OF PERSISTING PAIN OF THE FIFTH LUMBAR NERVES WITH INTERVERTEBRAL DISC SYNDROME

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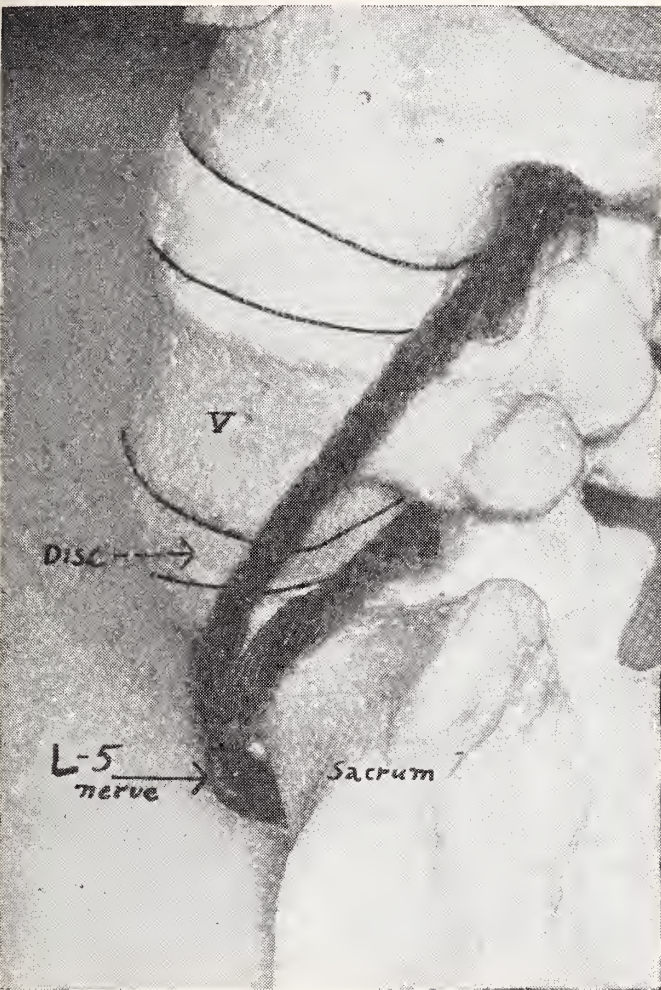
The literature on intervertebral disc surgery is now extensive. We shall limit the scope of this paper to making two points: first, to stress again the importance of an adequate decompression of the fifth lumbar nerve in its foramen; and second, to report our experience with section of the dorsal root as a means of relieving persisting pain in this nerve, which has not been relieved by previous disc surgery.

Our experience, which began at the Henry Ford Hospital, in Detroit, dates from the beginning of the modern era of disc surgery, which started by Barr and Mixter's report in 1934. In a series of approximately 800 laminectomies for this condition; nearly ninety percent have involved the fifth lumbar nerve. In the literature one can find anatomical reasons for this predominance, but I believe it has not been sufficiently stressed; so we will mention again what we feel are the important anatomical reasons. First, the fifth lumbar nerve is the largest in size and it goes through the potentially smallest foramen of the lumbar nerves. Second, the foramen is narrowest in its AP diameter, and is made up of the intervertebral

disc in front and the overhanging edge of the facet behind. If the disc is at all prominent, it can definitely encroach upon this foramen or obliterate it. Third, the fifth lumbar nerve is held firmly in its canal by the dural sheath, and it does not have the leeway for movement that the other nerves have. Fourth, if the lumbosacral facet joint space is in the sagittal plane, increased mobility of this facet joint can result in definite nerve impingement against the intervertebral disc. The lumbar lordosis that results from poor posture and from weakened intervertebral disc affects this foramen more than any of the others. Fifth, chronic irritation of the nerve and its ganglion in the foramen, with resulting adhesions, is the probable explanation of the pain which persists even though the offending segment of disc has previously been removed. See illustration.

The commonly used limited exposure for the removal of the disc fragments is, we believe, an important reason why so many cases have a persistence of or subsequent return of pain. The lateral part of the disc, unexposed and therefore not decompressed, continues to exert its pressure in the foramen. It is here that the small sensory branches to the vertebral body and facet come off from the nerve.

* Given before the VA meeting in Providence, Rhode Island, April 6, 1954. From Veterans Administration Center, Togus, Maine.



Lateral view of lumbosacral region showing the fifth lumbar nerve in its foramen, with facet posteriorly and disc anteriorly. Specimen with simulated discs and nerves, edges retouched for clearer definition.

The second part of this report has to do with dorsal-root section of the fifth nerve as a means of obtaining more constant relief of pain where the nerve has either been previously damaged in surgery or where it has irreparable damage from chronic pressure or irritation. Although dorsal rhizotomy is commonly used with other nerves, it has not seemed feasible to use it with the nerves of the brachial and lumbar plexuses because of the risk of producing disabling motor or sensory deficits.

Sherrington in 1894 brought out the fact that there is a dermatome overlapping and stated that because of this, motor or sensory deficits will not result unless there is a section of more than one of the nerves. Foerster in 1936 reported experiments on humans where he substantiated Sherrington's statements. He performed multiple nerve sections leaving one nerve uncut between them and, by using electrical stimulation, noted the sweating reactions. His findings agreed with Sherrington's as to the safety of cutting one nerve root only.

This procedure was first brought to my attention by the late Dr. Adson of the Mayo Clinic. He ob-

tained relief of pain in a case that had been subjected to two previous laminectomies elsewhere, which had failed to relieve the pain. His procedure resulted in a cure. Some time after that a similar case was referred to us where previous surgery had resulted in no relief of the pain. Although we realized that the patient was quite a nervous individual, we explored again and found that the fifth nerve was caught in a dense scar. It seemed futile to try to free it from this scar, so we sectioned the nerve proximally. However, the pain was not entirely relieved, and after several months a cordotomy seemed indicated and was done. Even this did not entirely relieve the pain, and it was months later before the patient was able to return to a fairly normal life as a housewife.

But in spite of this discouraging case, we felt that the idea was correct; so we applied the procedure whenever we came across cases where surgery had been unsuccessful in relieving pain or whenever we found at the time of operation a nerve so damaged with scar that we felt it wise to section the sensory component of the nerve. We have been encouraged to continue with this procedure because the results have been so satisfactory. In no case after the first one did we fail to relieve the pain; and the only difficulties have been in two cases where more than the usual numbness resulted and in two cases where there was weakness of eversion at the ankle.

To date, since July, 1950, we have used this procedure in 22 cases, 12 while in Detroit, 3 while in Waterville, and 7 here at Togus. While this is considered a preliminary report, to be followed up later after a longer follow-up, we can state here that in all of the cases there was relief of the specific nerve-root pain, except in the first one, and that there has not been to date a subsequent return of the pain. All of the patients have been glad that they had the operation done. In two of the cases, which includes the first one mentioned above, there was concern about the numbness that resulted, but as time went on it has become less noticeable and troublesome. In two of the cases, including the first one, there has been definite weakness of eversion of the foot at the ankle. In the first of these it was quite troublesome but cleared up almost entirely in a few months and was not the thing that bothered the patient most. The other case was one of our last ones, done about three months ago. This patient has not yet begun to regain the lost motor function, but we feel that, judging from our first case, he will regain much, or at least some, of this lost function. In this latter case the nerve appeared unusually large and had so much scar tissue about it that we did not dare leave it intact; and the anterior motor component of the nerve could not be distinguished and therefore was not saved. But in this case the motor weakness was preferable to the pain which the patient had had before.

It is quite remarkable how little motor or sensory deficit results from section of such a large nerve as the fifth lumbar. Sometimes one cannot find any sensory deficit, and sometimes there will be a narrow band of hypesthesia down the outer aspects of the leg above the malleolus and a small patch on the outer aspect of the foot below the malleolus. Aside from these two cases mentioned above, we could find no real motor weakness. In the second of the two cases mentioned above, the patient stated that he had subjective numbness and apparent objective anesthesia of almost the whole lower extremity. However, as time went on, this area became smaller in extent and gradually began to vary with examinations, and it is now apparent that his disturbance is mostly hysterical.

PRACTICAL POINTS

In this preliminary report we will not give detailed reports on each case, but we will list a few lessons which we have learned from our experience thus far. First, we do not advise that the nerve be sectioned unless it is quite certain that pain is likely to persist without such section, that is, unless scar tissue is extensive or the nerve is extensively damaged. Second, we advise against section of the nerve unless the patient is appraised of the facts beforehand. If the operation is being done under spinal, we discuss the case with the patient before cutting the nerve. He should understand that there is likely to be some

numbness substituted for the pain. Third, at the time of operation, before the nerve is sectioned, it is better to test electrically to ascertain which is the motor bundle and not to section this. Fourth, there may be some objective sensory deficit, but as time passes this is likely to diminish and become less disturbing. And fifth, it is probably better not to use this procedure on patients who are quite psychoneurotic or to whom a possible motor or sensory deficit is likely to be as disturbing as was the pain. Sixth, while this is a fairly safe procedure with the fifth lumbar nerve, we feel that it is not wise or often necessary to use it on the first sacral. This latter nerve is likely to be more important for sensory function than the fifth lumbar because anesthesia of the sole of the foot is more serious than on the outer aspect of the leg. We also doubt if this method would be applicable to the cervical plexus as even a partial anesthesia of the fingers would be very undesirable.

In conclusion, we present this preliminary report to stress again the importance of thorough decompression of the fifth lumbar nerve, which is the important one in the lumbar plexus, and we report our experiences with section of the fifth lumbar nerve to show that it is a feasible procedure. We have pointed out its disadvantages, and it will be interesting to compare with the experiences of others who have used this procedure in the treatment of intractable pain with a disc syndrome.

BRONCHIOLAR (ALVEOLAR) CELL CARCINOMA OF THE LUNGS

Case Report

EDWARD L. FOOTE, M. D.*

Attention is called to the less frequent type of lung carcinoma known as alveolar cell or bronchiolar carcinoma which presents no characteristic symptoms or signs and is accompanied by negative bronchoscopic findings. It is not as rare as some reports indicate. The incidence is given as one to five percent of all lung malignancies. Formerly regarded as multicentric in origin and therefore hopeless, it has been shown that the majority originate unicentrically, may be present for a long time without bilateral extension or metastasis and therefore can be removed surgically if this type of carcinoma is kept in mind as a diagnostic possibility.

The case reported occurred in a series of over 50 lung malignancies during the past three years. It occurred in a neuropsychiatric patient who died suddenly following operative removal of a pin in treatment of a fractured femur. The lesion was discov-

ered at autopsy without multicentric origin or metastasis.

DEFINITION

This type of carcinoma has been called by about 30 names, the most common type being alveolar cell or bronchiolar cell carcinoma, adenomatosis, peripheral adenocarcinoma, etc. It was first described by Malassez 78 years ago at autopsy and in 1903 by Musser as a diffuse areolar cell type. Neuburger and Geever reviewed 25 cases in the Archives of Pathology in 1942. Only one patient was diagnosed during life prior to 1943 but since then there have been numerous cases diagnosed. Storey, Knudtson and Lawrence reported 205 cases available for analysis. At present no mention is made of the tumor in some of the leading works on Surgical Pathology. Confusion in nomenclature has resulted from a dispute concerning its point of origin. The tumor is considered epithelial in character. There has not been an agreement on alveolar histology. Some ob-

* Pathology Section. From: Veterans Administration Center, Togus, Maine.

servers state that epithelium stops at the terminal bronchiole, others consider the alveolar lining epithelial in origin. The first group maintains the origin of the tumor to be in the terminal bronchiole hence bronchiolar cell carcinoma, and the latter described an alveolar origin and used the term alveolar cell tumor. Origin can be either unicentric or multicentric. In the latter the term adenomatosis is used. This implies a benign character which is negated by the finding of malignant areas in almost all of the tumors. This term should be discarded. Dr. Graham has maintained a multicentric origin of the tumor.

CLINICAL FEATURES

Clinically, the majority, about 70%, occur in males; the youngest reported was a male 16 and the oldest 89 with a mean age about 54. Almost half were in the age group 40 to 60 years or the cancer age group. The symptoms are not diagnostic. Cough and pain are noted in the majority of cases as well as increased sputum, hemoptysis and weight loss, anorexia and fever if advanced. Only about 10% had no symptoms. Physical signs are also non-specific and diagnosis was formerly made at autopsy or lungs resected at operation. Now diagnoses are made by X-ray and cytological study. A few have been diagnosed by needle biopsy or exploratory thoracotomy. This tumor is mistaken clinically for tuberculosis, atypical pneumonia, metastatic adenocarcinoma, sarcomatosis, silicosis, Hodgkins disease, abscess and bronchiectasis. Symptoms with duration over a year have been reported in about 20% of cases with one case 11 years duration.

The tumor arises in most cases by a unicentric origin from the basal cells of the terminal bronchioles with spread to adjacent tissue and other portions of the lungs. Bronchiolar carcinoma resembles the lung lesion observed in South African sheep after a long drive. It is called Joasiekte. However, the lesion in sheep is considered infectious in origin. The lesion is a peripheral one, usually arising as a discrete nodule. Cut section of the tumor in our case revealed a grey tan, firm surface, adjacent to which were areas of atelectasis. Microsections from our tumor showed it to be a typical bronchiolar cell carcinoma fulfilling the requirements for diagnoses as are stated below. Metastasis are reported up to 50% principally situated in the liver, adrenals and brain. Diffuse and multicentric tumors have been described. Storer, Knudtson and Lawrence have established the following criteria for these tumors as follows: (1). A tumor characterized by alveoli lined by epithelial cells of columnar or cuboidal type with eosinophilic cytoplasm and basally placed nuclei. (2). Preservation of the pulmonary architecture. (3). Absence of intrinsic tumor of a bronchus. (4). Absence of evidence of primary adenocarcinoma in any other part of the body. The only curative treatment is surgical

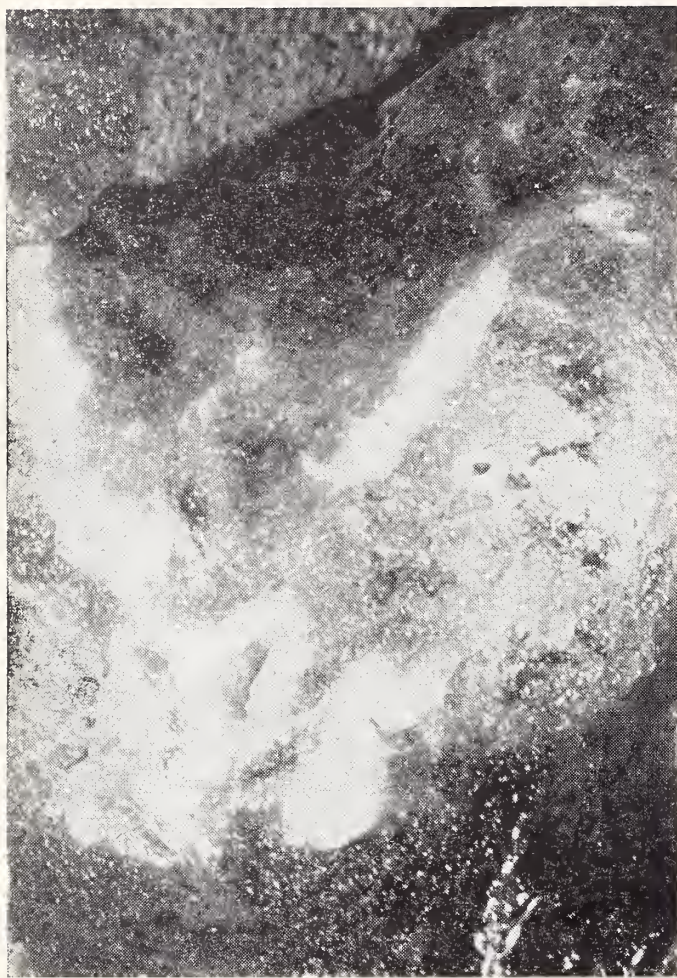
removal. Since many of these tumors metastasize or involve the other lung, early diagnosis is imperative. Palliative X-ray treatment delays the progress of the disease—Nitrogen mustard, etc., should also be considered.

Case: The patient (DH) was a 67-year-old white man who had been continuously hospitalized since 1945 for a chronic organic brain disease associated with cerebral arteriosclerosis. He remained incompetent, disoriented, had various delusions, was hyperactive and developed assaultive tendencies. In 1947 he was discovered to have a positive serology and was given weekly injections for this. In 1952 he had a period of undiagnosed hyperpyrexia. On 1-2-54 he was unable to walk, X-ray revealed a fracture of the right femoral neck which was repaired on 1-4-54 with Smith-Peterson nail. Due to psychotic restless behavior on 1-12-54 the nail was removed and patient suddenly expired about eight hours later.

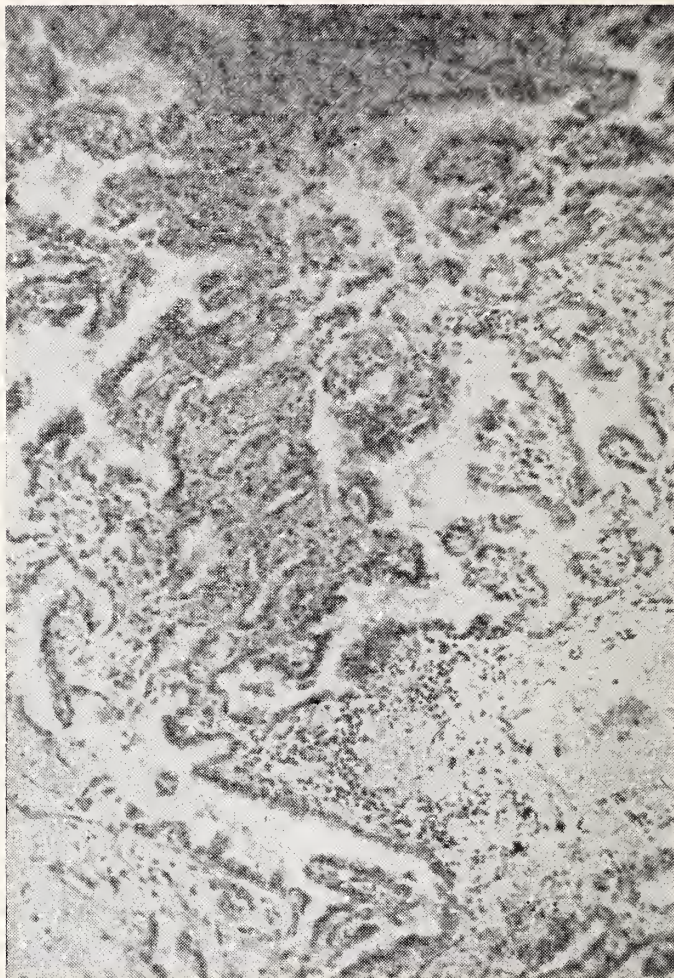
X-ray Findings: Review of films dated 5-18-53 and 11-3-52: *Chest:* The November film shows some motion which obscures detail but there is an irregularly shaped shadow of slight density, poorly outlined, roughly 3 x 2 cm. in diameter lying immediately under the right clavicle. Distal to this extending into the lateral right clavicular area and the apex the lung is a little less aerated than on the opposite side. This is consistent with a neoplasm with pulmonary atelectasis distal to it. Pulmonary tuberculosis should not be ruled out. 5-18-53 film fails to show this probably because of lack of coöperation, the position is very poor and the shadow of the spine overlies the position where the shadow may be.

At autopsy there was a unicentric bronchiolar cell carcinoma involving the upper portion of the right upper lobe in the subclavicular region. On section it had a firm grey tan surface measuring 5 x 3 cm. There was associated atelectasis of surrounding lung tissue. No intrinsic tumor was found in the bronchus and no evidence of a primary metastatic adenocarcinoma was found in any part of the body. Circulatory system showed an arteriosclerotic, coronary heart disease with extensive myocardial fibrosis. There was advanced benign nephrosclerosis.

Microsection of tumor showed a rather uniform appearance. There were alveolar-like spaces lined with short columnar and cuboidal nonciliated epithelium. The cytoplasm took an eosinophilic stain and there were enlarged hyperchromatic nuclei situated toward base of cell. Little evidence of mitotic activity was observed. In some portions of the tumor there were areas of basophilic staining mucin. Other areas showed a desquamation of tumor cells into the alveoli. The tumor was demarcated from the lung tissue by a band of fibrous tissue. Adjacent to the tumor the lungs showed areas of atelectasis. The regional lymph nodes were not involved.



Section of right upper lobe showing tumor. It has a grey-tan surface with atelectasis of surrounding lung tissue.



Microsection of tumor. Uniform appearance with alveolar-like spaces lined with cuboidal epithelium. The cell nuclei are enlarged, hyperchromatic and situated toward the base of the cell.

SUMMARY

A case of unicentric bronchiolar carcinoma has been presented which conformed to the established criteria for these tumors. It was found at autopsy in a neuropsychiatric case with no apparent symptoms, and no recent X-ray was available. These tumors are rare and present difficulties in diagnosis, the majority of the cases are diagnosed at autopsy but an increasing number are discovered by X-ray and cytologic examination. Many more cases would be recognized if serial sections were made of all lungs examined. Early diagnosis is imperative for successful treatment. These tumors should be considered in a case involving a solitary nodular lung lesion or persistent pulmonary infiltration of uncertain etiology.

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NEEDLE BIOPSY OF THE LIVER

(Experience with fifty-one liver biopsies)

ROBERT L. OHLER, M. D.*

The purpose of this paper is to present the experience at the Togus VA Center with 51 needle liver biopsies with the hope that increased interest in this procedure may be aroused.

Although first reported in 1895¹ experience in this country began following the report of Iversen and Roholm² which appeared in 1939. Excellent review articles are available and should be read by those interested in using this method.^{3, 4, 5, 6, 7, 8}

The techniques, risks, and limitations have been described. The validity of the needle biopsy specimen as a representative sample in diffuse liver disease has been established;³ the histological changes in various types of liver disease have been described;^{9, 10, 11, 12} and their correlation with liver function tests have been studied.^{12, 13} Without doubt our understanding of diseases of the liver has been materially advanced by the widespread use of needle biopsy.

Obviously the acceptance of any diagnostic procedure depends upon its dangers as well as upon the usefulness and reliability of the information it provides. Zamcheck and Klausenstock⁴ reviewing reports of 20,016 needle liver biopsies done since 1907 found 34 alleged deaths, an incidence of 0.17%; they considered only 17 acceptable in light of presently accepted contra-indications and thus calculated the true mortality to be 0.085%. Reported causes of death were, in order of frequency, hemorrhage, bile peritonitis, suppurative peritonitis, possible bile embolism, and undetermined causes.

In studying the reported complications the same authors found pain, usually brief and readily controlled with analgesics, was the most frequent, occurring in 5% to 50% of the patients. In addition the following complications have occurred, all infrequently: friction rub over the liver, pleural effusion, pneumothorax, hemothorax, bile pleural effusion, perforated abdominal viscus, "pleural shock," implantation of tumor cells in the needle track, and bile peritonitis. The latter has been seen principally in patients with obstructive jaundice, apparently related to increased intraductile pressure.

INDICATIONS

The numerous indications for needle biopsy of the liver which have been proposed^{3, 6, 7, 8, 11} would appear to fall into the following four general categories:

A. Establishing the cause of jaundice. Of particular importance is the occasionally difficult problem of differentiating between extrahepatic (obstruc-

tive) and intrahepatic (hepatocellular) jaundice. Authorities generally agree^{3, 15} that in about 85% or 90% of cases of jaundice, clinical and laboratory findings suffice to establish the diagnosis. In the remaining 10% or 15% in whom uncertainty continues because of contradictory laboratory findings, atypical history, etc., liver biopsy may be expected to yield the correct answer in all but rare instances, particularly the so-called cholangiolitic hepatitis, cholangiolitic biliary cirrhosis, and toxic hepatitis,⁹ in which bile stasis may be indistinguishable from that found in extrahepatic obstructive jaundice. The finding of "bile lakes" has, in the experience of Schiff⁷ led to the correct diagnosis of surgical jaundice in 100% of his cases.

The slight risk of bile peritonitis following liver needle biopsy in patients with obstructive (extrahepatic) jaundice is considered by most authorities to be far outweighed by the much greater hazard of surgery in the presence of severe hepatitis or liver failure,^{3, 4} and preferable to the uncertain practice of prolonged observation in the expectation that the diagnosis will clarify itself before serious hepatic damage has occurred. It is of interest that the most characteristic changes of viral hepatitis are said to occur during the first two weeks of the disease while those of obstructive jaundice appear later.³ The writer agrees with the statement³ that liver biopsy is indicated whenever uncertainty exists in the diagnosis of the etiology of jaundice.

B. Establishing the presence of suspected liver disease and following the course of known liver disease. Numerous situations occur in everyday practice in which the presence of hepatomegaly, abnormalities of one or more of the liver function tests, or other findings suggesting the presence of acute or chronic liver disease require that an accurate diagnosis be made if the patient's best interests are to be served.^{3, 7, 15} The value of repeated liver biopsies over a period of time in formulating prognosis and planning therapy in cases of cirrhosis, nutritional fatty infiltration, and hepatitis with protracted symptoms has been commented upon by several authors.^{3, 14}

Obviously the presence of a few small metastatic nodules in a liver cannot be ruled out by a negative needle biopsy; however, primary or metastatic tumors have frequently been revealed in this manner.^{3, 7} Large palpable masses suspected of being metastatic nodules in the liver have been needled directly through the anterior abdominal wall. Most authors today, however, prefer the intercostal approach be-

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cause of the danger of perforating the gallbladder, colon, or other viscus.³

Liver biopsy is considered essential by many^{3, 7} before shunt operations are performed for portal hypertension, as the differentiation between intrahepatic and extrahepatic portal venous obstruction affects not only the prognosis, but may govern the choice of procedure.³

C. *As an aid to the diagnosis of systemic disease.* According to Zamcheck and Sidman³ over 200 conditions have been reported as involving the liver. The following conditions have been recognized by means of liver biopsy; many have characteristic histologic pictures and others may be suspected on the basis of biopsy and confirmed by other means: tuberculosis, brucellosis, sarcoid, infectious mononucleosis, amebiasis, leukemia, histoplasmosis, hemochromatosis, hemosiderosis, amyloid disease, Gaucher's disease, Wilson's disease, syphilitic cirrhosis, cardiac cirrhosis, fungus infection, Weil's disease, toxic hepatitis, tularemia, liver abscess, periarteritis nodosa, disseminated lupus erythematosus, Hodgkins' disease, other lymphomas, congenital cystic disease, ascariasis, hydatid disease, Kala Azar, schistosomiasis.³

It has been the practice of several authors to biopsy the liver of any patient with a protracted undiagnosed illness. We have found this policy rewarding on several occasions and feel, as do others, that liver biopsy is the surest means of making the diagnosis of hemochromatosis, a disease which is now treatable.

D. *As an investigative tool.* Liver biopsy has recently led to the accumulation and clarification of a large body of data concerning the natural history and pathogenesis of liver disease, and the adaptation of recently developed histo-chemical techniques³ promises to further our knowledge of the cellular physiology and biochemistry of the liver in numerous normal and abnormal states.

MATERIAL AND METHODS

Technique. Of the various techniques and instruments proposed for needle liver biopsy^{3, 5, 6, 14} we have used only the Vim-Silverman biopsy needle,¹⁶ a 14 gauge needle 9.5 cm. long with a split inner needle 2.5 cm. longer than the outer needle. The technique we use is well-described by Hoffbauer and by Cogswell, et al.^{5, 6} We have used almost exclusively the intercostal approach. The limits of liver flatness are percussed in deep inspiration and expiration. The skin, subcutaneous tissue, diaphragm, peritoneum, and liver capsule are anesthetized using 4-6 c.c. of 1 to 2% procaine, the deeper tissues anesthetized during held expiration, and a nick is made in the skin with a Bard Parker blade. After several deep breaths, with the patient holding a deep expiration,

which requires careful instruction and some practice by the patient, the outer needle with the forked obturator tip just inside the bevel is inserted through the 8th intercostal space in the anterior axillary line a distance of $2\frac{1}{2}$ -3 cm. after the liver capsule is penetrated. The outer needle being held firmly, the inner needle is then inserted as far as possible. The inner needle is in turn held while the outer needle is pushed to its original relation, covering the tip of the inner needle. Both needles are then slowly turned 360 degrees and withdrawn. The whole procedure takes 10 seconds or less. A second attempt is made if an adequate specimen is not obtained; this appreciably increases the number of adequate specimens. Almost all of our biopsies have been done by the author. As experience has increased, the number of unsatisfactory specimens has become negligible. These have occurred most frequently in livers containing considerable scar tissue.

Formalin fixation followed by ordinary paraffin block sectioning and H & E staining have been used. Iron stains have been made occasionally.

During insertion of the needle the operator learns to recognize the difference in consistency between fibrotic and non-fibrotic livers.

After biopsy the patient is instructed to remain in bed for 24 hours, with little or no movement for the first 6 hours. Pulse and blood pressure are observed frequently during the ensuing 24 hours. Demerol is prescribed for pain, but is rarely needed.

PRECAUTIONS AND CONTRAINDICATIONS

Prothrombin time and venous coagulation time are determined before biopsy, and the chest X-ray is inspected. A pint of compatible blood is crossmatched and retained on call in the blood bank for 48 hours. This has been used once in our 51 biopsies.

The contraindications we recognize are those generally accepted:^{4, 5, 6}

(1) Inability to coöperate, particularly inability to hold the breath for 20 seconds.

(2) Prothrombin (Quick one-stage method) of less than 50% of normal, or venous coagulation time prolonged by more than 2 or 3 seconds.

(3) History of hemorrhagic tendency.

(4) Infection in the right pleural space or the right lower lung.

(5) Increased peripheral venous pressure, a theoretical contraindication which Sherlock¹⁷ states is unnecessary.

(6) Obstructive jaundice is not considered a contraindication, although some authors disagree. We avoid biopsies, however, if the diagnosis of obstructive jaundice seems certain, and restrict biopsy in such cases to instances when it is required as a definite aid in making a decision in resorting to surgery.

(7) Ascites. Ascites should be removed before biopsy.

DATA

Our series consists of 51 liver biopsies in 50 patients, in all of whom it was the opinion of the staff that liver biopsy would be likely to contribute materially to the patient's welfare.

RESULTS

Biopsies were done for the following indications:

(1) Suspicion of surgical jaundice	10
(2) Suspected acute hepatitis	2
(3) Undiagnosed long-term illness	7
(4) Suspected chronic liver disease	17
(5) Following the course of known liver disease	3
(6) Suspicion of liver metastases	2

Results obtained were as follows:

Insufficient or no liver tissue obtained	10
(All prior to April, 1953)	
Adequate specimen obtained	41 (82%)
Biopsy proved diagnostic or materially aided patient's management ..	32

The following diagnoses were made by the pathologist on the basis of liver biopsy:

Extrahepatic biliary obstruction (all later proven at operation)	9
Acute hepatitis (Viral)	4
Cirrhosis	4
Chronic inflammatory process	10
Metastatic tumor in liver	2
Primary carcinoma (hepatoma)	1*
Sarcoidosis ..	1*
Hemochromatosis ..	1
Hemosiderosis in course of chronic hemolytic anemia	1
Normal liver tissue	5

* Suspected on basis of needle biopsy, later proved by wedge biopsy done at laparotomy.

COMPLICATIONS

In our experience complications have been mild and benign. Pain has occurred during insertion of the needle in about 50% of cases. It has rarely been of severe degree. This has usually been momentary and referred to the "pit of the stomach." Pain on deep inspiration has occurred after biopsy in about one-fourth of the patients, requiring analgesic drugs in only two, one of whom had aggravation of already present pain in the region of the liver, lasting for several weeks following liver biopsy. This patient had a hepatoma in which severe pain is a recognized symptom. No sign of hemorrhage or other evidence of previous needle liver biopsy was found at autopsy several weeks later.

Hemorrhage of sufficient severity to cause signs of surgical shock occurred in one patient but was not fatal. This was a 55-year-old man who had been hospitalized for several months with a severe debili-

tating, febrile illness, with pain in the distribution of both sciatic nerves. All diagnostic studies, including X-rays of the gastrointestinal and genitourinary tracts and the skeleton as well as bone marrow biopsy, having been of no avail, a liver biopsy was performed in spite of the fact that the prothrombin was slightly below the accepted value of 50%. Vitamin K was administered prophylactically. Several hours after the biopsy clinical signs of shock appeared. A blood transfusion was begun and arrangements for laparotomy were made. Upon reaching the operating room the blood pressure and pulse returned to normal and operation was not done. At autopsy several weeks later he proved to have an embryonic tumor originating in the primitive genital ridge, involving the lumbar and sacral plexuses, the spine, pelvis, and massively infiltrating the liver. A spongy clot the size of a fist was found free in the right lower abdomen. This was thought to be the result of hemorrhage at the time of liver biopsy. Liver biopsy in this case yielded only normal liver tissue.

We have not seen bile peritonitis or any of the other complications listed in the literature, and none of our patients have died as a result of liver biopsy.

DISCUSSION

Our rather limited experience with liver biopsy has been gratifying, and reflects the much larger recorded experience of other authors. Whether by pure good fortune or otherwise, we have had no serious untoward results. In this connection it is of interest that Schiff⁷ has reported a series of 574 biopsies in 249 patients without a death and with one severe hemorrhage. That there is a definite mortality inherent in the procedure we do not doubt; however, the reported mortality of 0.17%, or possibly 0.085% in the 20,000 cases collected from the literature by Zamcheck and Klausenstock⁴ is certainly not excessive, provided the procedure may be expected to serve a useful purpose.

Our attitude in this connection is that a definite indication must exist, and we have several times refused to do a liver biopsy where pure academic curiosity was the only purpose to be served.

Adherence to the almost universally accepted contraindications, we consider, adds appreciably to the safety of the procedure; of especial importance we believe is a careful explanation of the procedure to a coöperative patient with actual timing of his breath-holding ability prior to biopsy.

Our experience coincides with that of others in that fewer failures have been encountered as the operator's familiarity with the method has increased. We have found that a little practice in the post-mortem room has improved our ability to obtain adequate specimens. It was in this manner that we learned of the benefit of unhurried turning and with-

drawal of the needle. The need for a depth guard on the needle as advocated by some has not impressed us.

We do, however, subscribe to Schiff's⁷ remark that, "needle biopsy of the liver should be performed by one or two members of a given hospital staff, to provide the advantages of increasing experience. The diagnostic value of the procedure rises with the growing interest and experience of the collaborating pathologist as well as the person or persons performing the biopsies."

The accuracy of the histological diagnosis is not absolute,^{3, 7, 9} particularly in the interpretation of the significance of bile stasis, the early changes in obstructive jaundice, in toxic hepatitis, and in the interpretation of the etiological significance of the various granulomas. There is also the unfortunate occasional failure to obtain representative tissue in a liver massively infiltrated with tumor. However, correct conclusions can be expected in the great majority of cases.

The series of Schiff⁷ from a large gastrointestinal clinic gives a picture of the deficiencies in clinical and laboratory diagnosis even in the most expert hands, and of the additional accuracy contributed by liver biopsy. He reports that the clinical diagnosis was incorrect and the biopsy positive in 17.9% of 112 patients with cirrhosis, in 14.6% of 82 patients with hepatitis, in 9.8% of 41 cases of neoplasm of the liver, and in 20.6% of 34 cases of obstructive jaundice.

In an earlier report⁶ covering 403 biopsies Coggs-well, Schiff, et al., listed 13 errors in diagnosis on biopsy. Our only errors have been a small number in which normal liver tissue was found in the presence of metastatic disease of the liver. We have not as yet been mistaken in making the diagnosis of obstructive jaundice (9 cases) by biopsy.

Peritoneoscopic liver biopsy⁵ has not appealed to us, needle biopsy appearing equally safe, less complicated and time-consuming, and less uncomfortable for the patient. Occasionally we have resorted to laparotomy for the purpose of selecting the biopsy site in relation to the gross appearance of the liver; on two occasions this confirmed the suspicions entertained as a result of the needle biopsy.

SUMMARY AND CONCLUSIONS

1. Experience with needle biopsy of the liver in 51 cases is reported.

2. It is our impression that this is a reasonable procedure which can be expected to aid materially in the diagnosis and management of various forms of hepatic disease as well as more generalized diseases which involve the liver.

3. The dangers are not prohibitive, and it is felt that needle biopsy of the liver can properly be done in any hospital equipped to give emergency transfusion therapy in case of hemorrhage, provided a member or two of the clinical staff are sufficiently interested to familiarize themselves with the method and perform all such biopsies. The interest and coöperation of the pathologist is essential.

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THE SURGICAL IMPLICATIONS OF SOLITARY CYST ASSOCIATED WITH SMALL RENAL NEOPLASM

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Just one year ago we presented in this JOURNAL a case of lower pole solitary cyst which necessitated a secondary nephrectomy a few days after the cyst alone was excised, because the frozen section biopsy from the base of the cyst, which was inconclusive at the first operation, when subsequently processed by the regular staining technique showed a clear-cell carcinoma of microscopic size.

We bring this subject up again for two reasons. The first is the increasing incidental discovery of simple solitary cysts by modern diagnostic methods as compared to their apparent rarity in the past. The second is that within the year a case similar to the one above has appeared at this hospital. Apart from its statistical interest it revives the question of the surgeon's course of action when a clinical diagnosis of possible solitary cyst is made? Shall he operate at all in the absence of symptoms? If exploration is decided upon and there is the slightest hint of associated neoplasm whether by frozen section biopsy or gross suggestive clues, shall he carry out nephrectomy with the conviction that he is expeditiously saving the patient from fatal spread of a cancer or shall he simply excise the cyst in its free portion, consider the suspicious area of negligible malignancy potential, and not do a nephrectomy? Shall he compromise and do a partial nephrectomy? There is provocative information and controversy in the literature, old and new, to justify more than casual consideration of these various decisions. We wish to show the application of one of these decisions to our present case and bring up pertinent points that concern the other theoretical or practical courses of action.

CASE REPORT

Our patient was F. B., a 66-year-old male who was admitted to Togus on the urological service primarily because of lower abdomen discomfort, severe urinary irritability and difficulty in voiding. In spite of the picture of lower urinary tract disease there appeared to be equal distress from a complicating pneumonitis with fever to 102 and asthmatic breathing.

Physical examination showed a mildly obese male with dyspnea, asthmatic rales throughout the chest, heart enlarged to the left and a rough systolic blow chiefly over the tricuspid area, and B.P. 140/80. The abdomen was mildly distended but not tense. The liver was not clearly palpable but suggestively enlarged to three fingers below the right costal margin

by percussion. In the right flank there was a non-tender mass which seemed to be much too anterior and lateral to be the kidney. There was a residual urine of 50 c.c., and the prostate gland was enlarged. A later evaluation of the cardiac and pulmonary conditions by the medical staff concluded that he had chronic valvular and arteriosclerotic heart disease with angina pectoris and aortic stenosis with borderline cardiac compensation along with chronic pulmonary disease, probably senile emphysema with moderate bronchiectasis, chronic bronchitis and associated bronchospasm.

Of the routine and special laboratory studies during the early days of admission the following are pertinent. Urinalysis: Acid, S.G. 1.020, abundant amorphous urates, 8-10 WBC per high power field. Blood: Kahn negative, urea nitrogen 15 mg. percent, chlorides 94 milliequivalents, CO₂ 85 vol. percent or 38 milliequivalents. Hemoglobin 13.4 grams, RBC 4.39 M., WBC 10,000, PMN 78 percent, Lym. 20 percent, Mono. 2 percent.

Indwelling catheter drainage of the bladder was established, and attention was directed to the cardio-respiratory conditions. In about a week the fever subsided and the chest picture cleared except for intermittent but brief episodes of bronchospasm. Urological study was now begun.

DIAGNOSTIC STUDIES

An excretion urography showed function in both kidneys with some distension of the left renal pelvis and calyces, and incompletely visualized right pelvicalyceal system, associated with a large cystic shadow overlying the lower half of the right kidney. The bladder area showed five calcific shadows the size of marbles, which were compatible with vesical calculi. Cystoscopy confirmed the presence of the calculi and demonstrated prostatic hypertrophy and chronic cystitis.

A cystolithotomy was done, and later while still draining suprapubically from a tube, a transurethral resection of the prostate gland was carried out. With appropriate intervening periods of rest, further studies included parasacral retroperitoneal air injection combined with right retrograde pyelography, and renal aortography using about 20 c.c. of 70 percent Urokon under intravenous sodium pentothal anesthesia. X-rays of the bones showed no evidence of metastases. A cholecystogram and barium enema were normal.

The X-ray films were shown to members of the

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Figure 1. A plate of a pyelography series showing the outline of the large cyst in relation to the lower pole of the right kidney brought out more sharply by parasacral retroperitoneal air injection.

hospital staff and to visiting consultants including roentgenologists and urologists. The large cystic mass in the right abdomen was considered most compatible with a simple serous cyst of the lower pole of the kidney, producing some pressure upon, but not significantly distorting the pelvis and calyces. At the time of the retrograde study, urine collected by catheter from the right kidney failed to show tumor cells with the Papanicolaou stain. At a tumor board meeting it was decided to explore the right kidney.

OPERATION

At operation a right kidney of normal size was found with a small cortical cyst 2 cm. in diameter on the posterior aspect of the upper pole, and a large "solitary" cyst about the size of a small grapefruit on the anterior aspect of the lower pole, whose wall was thin but tense. Aspiration of the cyst produced clear, watery, straw-colored fluid. The interior of the cyst consisted of a single cavity, and after evacuation of the fluid a very slight corrugation and nodularity of its renal surface, which was otherwise regular, was noted. Several minute, fleshy, yellowish,



Figure 2. The kidney cut sagittally showing the collapsed cyst related to the lower half of the kidney. Arrow shows the area from which small yellowish pieces of tissue were removed for frozen section biopsy.

papillary-like masses, which tended to bleed on manipulation, were attached to that surface. A frozen section of the yellowish tissue resulted in a report that it consisted of debris without suggestive cellular findings. With decision left to the operator, a nephrectomy was carried out because the yellowish tissue or "debris" and rough surface were too suggestive of underlying carcinoma (hypernephroma) to be disregarded. Further, the opposite kidney was known to have adequate function. The early postoperative days were complicated by recurrence of respiratory distress, but after two weeks the patient was up and well enough to be discharged.

PATHOLOGICAL REPORT

The gross findings noted by the hospital pathologist, Dr. Edward L. Foote, were essentially those observed at operation. On section through the basal junction between cyst and renal parenchyma there was no gross finding of obvious tumor mass, but microscopic section disclosed: "... at the base of the cyst a band of tumor cells which have the characteristics of clear cells, in that they have centrally

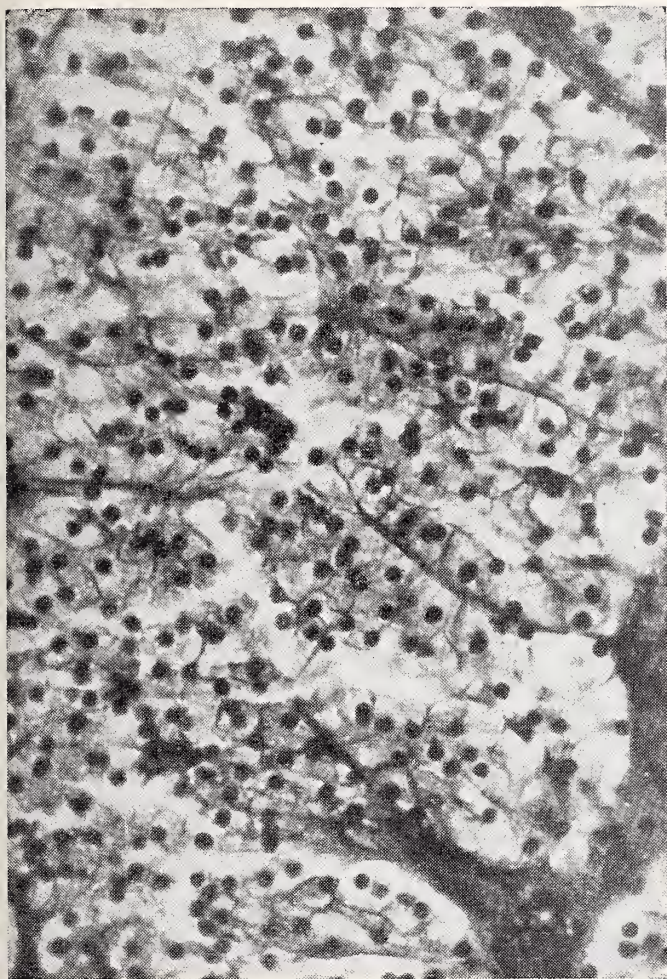


Figure 3. A portion of tumor tissue from the junction area of cyst and renal tissue. The cells are typical of those of renal cell carcinoma of the clear-cell variety.

placed nuclei with water-clear cytoplasm. The cells are polygonal in shape and in one place extend to the lining of the cyst. Adjacent to this the renal tissue shows an increased fibrosis and many tubules have been replaced by fibrous tissue. Other portions of the kidney tissue show adequate numbers of glomeruli with some irregularity of the tubules. Some of the tubules contain amorphous material. The specimen represents a solitary cyst of the kidney involving the lower pole at the base of which there is a clear-cell carcinoma without invasion of the renal tissues."

Thus, as in the case reported last year we had again a large solitary cyst (or simple serous cyst) of the lower pole associated with a clear-cell carcinoma at its point of attachment to the kidney detectable only by microscopic section.

Can Diagnosis of Solitary Cyst be Made from Clinical Findings?

The subject of solitary cyst is fully discussed in the literature on the points of theoretical etiology, differential diagnosis between cyst and large tumor, techniques for removal of the cyst, biopsy, and numbers of cases reported. Attention is also called to the

fact that a given kidney may show more than one simple serous cyst. On the matter of diagnosis suffice it to say that most authors feel that the factors of pain, hematuria, palpatory impressions, along with smoothness or irregularity of outline, density, type of distortion of the pelvicalyceal architecture, and displacement of the ureter or kidney on X-rays, are useful in differentiating a large cyst from a large neoplasm but that it is presumptuous to expect dependable diagnosis from these alone and that exploration must be done. On the other hand, it is implied by some that it is very possible to be at least very suspicious of cyst if not downright certain in the bulk of cases, using these criteria.

Past Knowledge of Cyst Associated with Small Neoplasm.

It is well known that solid tumors may undergo secondary cystic degeneration, but these are not related to the type of cyst and tumor combination under discussion.

The joint appearance of solitary cyst and neoplasm is well recognized. For some time urologists have been aware that the presence of bloody fluid or clots within a cyst may mean malignancy. From 25 to 35 percent of such cysts may be associated with malignancy, while only 2 percent may be malignant if the fluid is clear. In 1936 Whitmore cited the finding in the literature of thirteen instances of neoplasm out of forty-two cases of hemorrhagic cyst. That the tumor may be very small has also been observed. LeComte in 1935 advised that the wall be carefully examined in hemorrhagic cyst for a rough internal surface before a conservative course is taken. Whitmore further commented that areas of tumor were found in the wall of a number of cysts on microscopic examination. In 1930 Ritter reported a small hypernephroma within the cyst while Wells found a small "papilloma" in another. More recent articles have emphasized the need for biopsy at the time of operation — even of the subcortical and centrally placed cysts where technically there is difficulty because of potential immediate or delayed hemorrhage of severe degree.

Small Neoplasm in Cyst Wall May be Overlooked.

In our present report we wish to re-emphasize that the neoplasm which may be associated with the cyst whether containing bloody or clear fluid may be extremely small and easily overlooked. In the present case as well as the one we reported one year ago, examination of the kidney after removal failed to show grossly identifiable tumor beneath the base of the cyst, and the fluid was not bloody. In each case the presence of carcinoma was demonstrated by microscopic section with routine staining technique, although in the earlier case hint of malignancy was provided by the Papanicolaou stain of the urine from

the kidney before operation, which was mistakenly disregarded. At operation the only evidence that aroused suspicion of neoplasm was the very slight corrugation and nodularity of a small portion of the cyst cavity in contact with the kidney parenchyma. In the present case there were also a few minute yellowish masses of "debris".

Needle Aspiration of Cyst at One of the Poles.

At this point we should mention that several authors on suspicion of a large cyst at one of the poles of the kidney have introduced a spinal needle into the mass, aspirated some of the fluid and thus confirmed the impression of cyst and ruled out a large tumor of cystic outline. Ainsworth and Vest, in addition injected opaque medium (same as used for urography) to outline the cyst for X-ray visualization. If the renal "cystogram" is smooth without irregularity, the diagnosis of cyst is considered certain. For record purposes the fluid is examined by the Papanicolaou method for the "remote" possibility of malignant tumor cells. In twenty-odd cases diagnosed by these authors by this method of aspiration and opacification of the cyst, hemorrhagic cyst or neoplasm was not found. In 1939 Fish reported two cases said to be cured by such aspiration and introduction of 50 percent glucose solution. The object of these reports has been to show that surgery is not necessary except in the cases of suggested malignancy or where there are symptoms and renal damage resulting from pressure produced by the large size of the cyst. Most urologists do not seem to favor such a procedure on the grounds of unnecessarily creating avoidable complications of hemorrhage, infection and pain. Prather, Lowsley and Curtis, and Braasch and Hendrick are among those who tend to reserve needle diagnosis where surgery is contraindicated or refused.

It can readily be seen that using the needle in this manner may in a large number of patients avoid a major operation, but of necessity we must point out that if the two cases we encountered within one year had been subjected to this method, both would have shown smooth outlines of the "cystograms" because the slight irregularities at the bases of the cysts would not have shown up as defects since the medium would have masked the area of contact between cyst and kidney. While Papanicolaou stain examination of the fluids from these cysts might have shown neoplastic cells the chances of a negative report is still great considering the fact that frozen section biopsy at operation in each case on actual suspicious material at the bases of the cysts proved to be inconclusive. In each case it was not possible for the pathologist to report malignancy. It is interesting that neither of the two patients had symptoms referable to the cyst.

Nevertheless one may choose to confirm the diag-

nosis of cyst by needle puncture but allowing for possible error as discussed in the preceding paragraph and not forgetting that in both our cases the cysts did not show bloody fluid grossly and were otherwise compatible with the usual description of simple serous cyst. From the literature up to this time we observe, however, that large cysts are usually explored and that smaller ones may be observed periodically for change in size, or symptoms which point to need for surgery.

Possible Courses of Action Upon Exploration.

If upon exploration a smooth cyst surface is found, and biopsy is negative for tumor cells, a common procedure is to remove the free cyst wall and to apply phenol and then alcohol to the attached remaining portion. Others pull away the remaining cyst wall from the renal parenchyma but risk massive hemorrhage at operation or later. If the cyst is very large but benign and has practically destroyed the kidney parenchyma, nephrectomy may be done provided the opposite kidney is normal.

If there is slight irregularity or other gross hint of possible malignancy or if a frozen section suggests tumor cells but there is no grossly evident underlying tumor mass, shall one proceed as in the case of the smooth-walled cyst or should a nephrectomy be carried out? May a small tumor be left in place without fear that it may advance into a significant cancer because it may only be a "benign" adenoma? The usual instinctive answer of the surgeon to this is nephrectomy.

But before this point of what constitutes malignancy is dropped we should like to refer briefly to the vast literature on tumors of the kidney which bears upon it. Fuchsman and Angrist observe that the difficulty encountered in establishing biological malignancy in kidney tumors is exceeded nowhere in the oncological realm; and that a relationship between benign tumors studied and the malignant renal tumors of greater clinical significance is indicated and merits further study. Pathology books and individual pathologists in discussing adenoma of the kidney which is found up to 4 percent at the post-mortem table and after some nephrectomies for other conditions, classify them routinely as benign. Many of these adenomas are only a few millimeters in size, while some reach a diameter of several inches. Microscopically they present tubular, canalicular, alveolar and papillary forms and may be associated with cyst formation. Fuchsman and Angrist refer to a microphotograph of a small adenoma, a portion of which shows clear cells as in typical Grawitz tumor (hypernephroma) and state that some have called this a "benign hypernephroma"! McDonald has indicated that 16 percent of hypernephromatous kidneys contain small adenomas. Bell has stated that the size and histology do not afford a reliable means

of differentiating the benign from the malignant forms of kidney neoplasms and maintains that adenoma is an early stage of carcinoma. He arbitrarily considers solid adenomas larger than 3 cm. in diameter as carcinoma. Cahill and others call attention to the widespread view that while adenomas are spoken of as benign the part they play in the production of carcinoma is uncertain. Herbut notes that on occasion benign adenoma may merge into adenocarcinoma making the line of demarcation extremely difficult or impossible. An interesting observation of Bell is that only 7 percent of renal-cell carcinoma over 5 cm. in diameter have shown metastases while in tumors over 10 cm. 83 percent showed spread. Vermooten has focused attention upon the tendency of clear-celled carcinomas to be more cortical in position, to grow very slowly by expansion, and to remain encapsulated for a long time, in contrast to the granular-cell carcinoma, which is medullary, grows faster, and is infiltrative. He recommends application of these facts in treatment of neoplasm in solitary kidney or where function on the opposite side is very poor, by excising the tumor beyond its limits as in carrying out partial nephrectomy for other conditions. Thus where a combination of cyst and small tumor appears it may be possible in appropriate cases to remove the cyst and the tumor-bearing area of the kidney together as in partial nephrectomy. However, he is aware that clear and granular cells may be found in the same tumor.

Not infrequently pyelography whether by excretory or retrograde method will show a defect indicative of a small cyst or tumor located deep in the kidney at the poles or hilar region and producing no appreciable change in the outline of the kidney. Biopsy or excision of the cyst may be carried out after the method described by Weyrauch et al., in which the pedicle vessels are temporarily constricted while the parenchyma is incised and explored. He states that the time has come "to denounce the archaic teaching that if there is sufficient evidence to warrant operation for suspected malignancy removal of the kidney is mandatory." It is his opinion that "if the lesion is malignant, carefully executed biopsy can do no harm; and if the lesion is benign, nephrectomy is too radical." There can be no argument against the objective of conservation of normal kidneys. It remains to be seen how in the hands of others the technique for biopsy and excision of the cyst will be free from complications in the form of immediate or late hemorrhage when applied to hidden, central cysts which are difficult to "peel out." It is our impression that where a deep, central cystic lesion is suspected of being neoplasm many urologists would prefer to carry out nephrectomy if the opposite kidney is normal.

SUMMARY

The probability of finding a very small neoplasm in the wall of a solitary renal cyst, detectable only by microscopic section, is re-emphasized. One year ago one such case was reported, and at this time, another. In each instance the presence of neoplasm was established only by microscopic examination of the cyst wall.

Having made a clinical diagnosis of solitary cyst, the surgeon may select two means of conforming the diagnosis. In the case of polar cysts this may be done arbitrarily by 1) needle aspiration and injection of X-ray-opaque medium into the cyst—a method which seems to permit missing a very small wall neoplasm; or 2) exploration.

The former method will spare the patient a major operation and permit periodic observation until such a time as symptoms or changes in the cyst make operation advisable.

Subcortical or central cystic lesions make exploration mandatory. In all explorations biopsy when technically feasible should be attempted. When the weight of evidence, gross and/or microscopic, favors neoplasm of any type, nephrectomy should be carried out if the other kidney is normal. If not, partial nephrectomy is done with removal of the cyst together with the tumor-bearing area.

If there is no evidence of neoplasm the cyst is removed by one of several methods which are well described in the literature. Occasionally nephrectomy is indicated where a large cyst is not associated with neoplasm but has practically destroyed the renal parenchyma.

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METASTATIC BRONCHOGENIC CARCINOMA PRODUCING SURGICAL JAUNDICE

Report of Two Cases

STUART M. ANDERSON, M. D., and EDWARD L. FOOTE, M. D.*

An infrequent cause of obstructive jaundice due to malignancy is extrinsic pressure on the extrahepatic bile ducts, if one excludes primary malignancy of the head of the pancreas. An unusual cause of such obstructive jaundice is that resulting from metastatic carcinoma involving the pancreas. Recently we have observed two cases at this hospital which were similar in their clinical manifestations. Both proved at autopsy to have obstructive jaundice incident to metastatic bronchogenic carcinoma involving the pancreas. The primary lesion in each was very small and "silent" as far as producing symptoms or signs is concerned. In neither case was the diagnosis made before death. One patient had a palliative cholecystojejunostomy performed for a presumably inoperable primary cancer of the pancreas. Liver metastases were obvious at the time of operation. The other patient had a cholecystectomy and choledochostomy; the common duct was found to be greatly dilated in this case with a stenosis at the ampulla of Vater. The gall bladder was thickened, shrunken and contained a single 3.5 cm. stone; no stone was found within the common duct. The pancreas was found to be enlarged and diffusely nodular, and the operative diagnoses in Case No. 2 were common-duct obstruction due to stenosis of the ampulla of Vater and chronic pancreatitis secondary to biliary reflux. In each instance autopsy revealed a small primary lung lesion and widespread metastases, especially within the abdomen.

CASE No. 1

A 54-year-old sporting-goods worker was admitted to this hospital on July 9, 1953, complaining of pain in the right iliac region of about six weeks duration. He stated that while unloading boats he felt a sudden tearing sensation along the right iliac crest. Thereafter he had severe burning pain, most marked in the region of the right anterior superior iliac spine and radiating into the groin. He was treated by bed rest and local injections, and was incapacitated over the next several weeks. He was unable to work because of pain in the right iliac region; this pain would be excruciating with coughing and sneezing. When he failed to make adequate progress at home, he sought admission to this hospital.

Physical examination showed the following posi-

tive findings: The patient was a well-developed, moderately obese, individual who appeared to be in rather marked distress due to pain in the right iliac region. A small protrusion resembling a sebaceous cyst was noted on the right forehead. Abdomen: prominent; no organs or masses palpated; right lower quadrant scar. Extremities: There was marked tenderness to palpation over the lateral aspect of the right iliac crest, most marked in the region of the anterior superior spine. Abduction of the right hip caused severe pain. Flexion caused moderate discomfort; then in descending order of discomfort, extension, external rotation, internal rotation, and adduction, the latter being practically painless. There was no swelling or discoloration. Extremities were otherwise normal.

Laboratory data: WBC 8,600, hemoglobin 13.4 grams, total protein 6.8 grams percent. Serology and urinalysis studies were negative.

X-ray data: 7-10-53, Chest — "Heart and lungs normal."

Course in the hospital: Following admission to the Orthopedic Service, the patient was evaluated. On August 5, 1953, an operation to remove the mass on the right forehead was performed. A tumor mass was found beneath the scalp protruding through the outer table of the skull. It proved to be very vascular, and therefore it was decided to terminate the operation. Biopsy was not done; it was the impression of the operator that the lesion was a hemangioma.

A number of days following the operative procedure, it was noted that the patient had become jaundiced. He was not complaining of any additional abdominal pains other than those at the time of admission. Laboratory studies revealed an obstructive type of jaundice, and the patient was transferred to the surgical wards on August 16.

Operation was performed on August 20, 1953, an exploratory laparotomy being done. Patient was found to have a massive carcinoma of the head of the pancreas with involvement of the regional nodes and extensive metastases to the liver. A palliative cholecystojejunostomy with jejunojejunostomy was done. The patient recovered from anesthesia and operation satisfactorily. However, he demonstrated a slow convalescence and required prolonged supplementary intravenous therapy. He complained of poor weight gain, and loss of strength and endurance. The

* From the Surgical and Pathology Services, Veterans Administration Center, Togus, Maine.

abdominal incision healed per primam. All sutures were removed on the tenth postoperative day, and the wound was free of complications.

The patient was allowed a trial visit at home, which ended precipitously with a request by his wife for emergency return to the hospital. He remained hospitalized and demonstrated an increasingly downhill course with marked loss of strength, endurance, and aggravation of his previous depressed state. Whole blood was administered in an attempt to check a progressive anemia, but this was unsuccessful. For his final seven days of hospitalization, the patient was unable to ingest fluids or solids and required complete intravenous feedings. He expired October 7, 1953.

Post-mortem examination showed a scar, residual of a palliative cholecystojejunostomy and jejuno-jejunosomy, the ostia of which were patent with no leakage. The lungs weighed 830 grams right, and 720 grams left. Sections of the bronchus to the right upper lobe near the point of origin revealed a bronchogenic carcinoma arising from the bronchus and extending to surrounding tissues. It measured 3.5 by 3 by 2.5 cms. The left lung had metastatic lesions. The liver weighed 2,700 grams. It contained numerous metastatic carcinoma nodules. The pancreas measured 18 by 4 by 2.5 cms. with nodular, firm tumor masses, one of which measured 3 by 2.4 by 2 cms. in diameter with smaller nodules. They compressed the ducts at the ampulla of Vater. The adrenal glands were almost entirely replaced by metastatic tumor. The kidneys showed metastatic lesions. There were no metastatic brain lesions. Microsections of bronchus showed an anaplastic, deeply staining oat-cell type of carcinoma. The pancreas showed invasion with metastatic nodules. The liver, adrenal glands, and kidneys had similar nodules.

CASE No. 2

W. E. B., a 53-year-old white male barber was admitted on February 19, complaining of anorexia, weakness, epigastric pain, and jaundice. One year prior to admission he noted the onset of abdominal bloating and abdominal cramps, which started in the right upper quadrant and radiated across to the left upper quadrant. In recent weeks the epigastric distress had become more frequent and was not relieved by eating. Five weeks before entry he began to vomit right after each meal and had frequently had a gnawing distress across his epigastrium, which was relieved by vomiting. At times when he lifted his right arm he seemed to get a cramplike sensation in his right upper quadrant; this distress did not radiate. He had lost some ten pounds in recent weeks. Three days before admission he was hospitalized elsewhere and it was noted he was jaundiced.

In his past history the patient stated he was studied for stomach trouble here in 1938 and had a G.I.

series, but no ulcer was found. He had noted light itching of the skin, but this was minimal on entry. He was accustomed to drinking one or two beers a week.

Review of systems: He had had frequent penicillin therapy in the past year for numerous colds.

Physical examination: BP: 134/90. A well-developed, slightly obese white male, who was obviously jaundiced. He appeared weak and chronically ill. The right pupil was slightly irregular; dentures in place. Chest, lungs and heart negative. At the time of admission it was thought that the liver was palpable two fingerbreadths below the right costal margin. This was not confirmed at subsequent examinations. On February 28, 1954, at mid-day the gall bladder was quite definitely palpable. No spider hemangiomas were noted.

Laboratory data: Urine: dark, amber, acid, 1014, albumin plus-minus, sugar, neg., bile present, rare RBC, 8-10 WBC; hematocrit 52, hemoglobin 14.6 grams; RBC 4.9; WBC 9,400; fasting blood sugar 100; BUN 15; total protein 6.6 grams; albumin 3.7, globulin 2.9; original alkaline phosphatase 12 units, repeat on 2-26-54 was 24 units; thymol turbidity 6; serum bilirubin 1 min. 9 mgm., 30 min. 10.9 mgm.; prothrombin time 100%; urobilinogen present 1-30 dil. at the time of admission, and later in a 1-10 dilution. Serology negative; serum chlorides 109; total cholesterol 348 with 50% esters; cephalin flocculation 1 plus.

Electrocardiogram: On February 23, electrocardiogram was normal except for very minimal ST segment changes, possibly suggesting low potassium.

X-ray data: Barium enema showed no definite abnormality but was unsatisfactory because of poor preparation. Flat plate of the abdomen on February 28, 1954, seemed to show a dilated gall bladder; also showed retained barium in colon but no free air beneath the diaphragm.

Clinical course: Following admission most of the findings in this patient pointed to obstructive jaundice. He continued to be weak and to vomit sporadically. He was given parenteral alimentation. On February 28 at noontime a Levine tube was inserted into the stomach in an effort to relieve nausea and vomiting. Patient was comfortable that afternoon but that night about 7:30 he was awakened from sleep with severe right-upper-quadrant and right-lower-thoracic pain of a pleuritic nature. He was sweating; the abdomen was tense. White count rose to 21,000. The Levine tube began to drain blackish-brown material, which was thought to contain both blood and bile; however, a guaiac test was 1 plus, and tests done for bile were negative. This episode

suggested that a gallstone had been forced either out of the common duct or from the gall bladder, through its wall, into the duodenum. Within two or three hours the abdomen became soft. Thereafter, there was no striking change in vital signs, and the patient was followed throughout the night. The abdomen remained soft to palpation the following day. On March 1 the patient was transferred to the Surgical Service for further observation. A possible acute Service for further observation. At this time it was again noticed that deep tenderness was present in the right upper quadrant associated with a low-grade fever.

Exploratory laparotomy was carried out on March 8, and a contracted gall bladder with evidences of both acute and chronic inflammation was found. The gall bladder contained a large solitary stone. The common duct was greatly dilated. There was a stenosis of the ampulla of Vater and a diffusely enlarged, firm, rubbery and nodular pancreas. The impression was one of chronic pancreatitis secondary to biliary reflux. The stenosis of the ampulla of Vater was enlarged with Bake's dilators. A duodenotomy was done, and further dilatation of the ampulla was carried out under direct vision. The common duct was drained with a long-arm T tube, the distal end of which extended through the duct into the duodenum. The gall bladder was removed. Two small lymph nodes in the region of the head of the pancreas were removed for biopsy; section of these nodes revealed no gross evidence of disease.

Postoperatively the patient's recovery was one of gradual improvement for the first six days. Adequate amounts of bile drained from the T tube. The jaundice gradually diminished. Peristalsis returned, and the patient began to take fluids by mouth. One disturbing factor, however, during this period was a continued tachycardia, averaging about 120, and also nausea with intermittent vomiting of small amounts of fluid. On the fourth postoperative day there was evidence of atelectasis in the left upper lobe; this disappeared after vigorous tracheal aspiration. X-rays of the chest the next day showed the left lung to be re-expanded with a small atelectatic area in the left lower lobe. Fluid and electrolyte balance was carefully followed because nausea and vomiting necessitated the continued use of parenteral fluids.

On the eighth postoperative day a small amount of blood appeared in the bile drainage over a period of several hours. However subsequent bile specimens showed no blood. The abdomen continued soft, and peristalsis actively passed gas and stool. The patient took small amounts of fluid by mouth and seemed to improve continually with the exception of the tachycardia and extreme apprehension. Antibiotics were discontinued on the seventh postoperative day. The

drains were removed on the ninth postoperative day. He continued to show improvement, taking from 800 to 1,000 c.c. of fluids by mouth without any vomitus or discomfort. Some electrolyte imbalance was present at this time. On the tenth postoperative day at about 6:00 a.m. he became more apprehensive, then extremely restless, and finally stuporous. Examination showed an apparent early left hemiplegia. Within an hour the patient lapsed into deep coma with dilated pupils, sluggish reflexes, and generalized flaccidity. Bile drainage from the T tube had increased during the preceding 24 hours from 500 c.c. to 1,000 c.c. Electrolyte studies were repeated; the serum sodium was found to be 119 mEq. This low value was corrected by giving hypertonic saline and other electrolyte solutions. A subsequent serum sodium level later that day was 134 mEq. However, he continued to remain in deep coma. A lumbar puncture was done, and increased pressure was found (360 mm. of H₂O); the spinal fluid was grossly bloody. Consultations were had with the Medical and Neurological services, and the general consensus was that the patient had had a cerebral hemorrhage. The possibility of hepatic coma was also entertained in view of the relatively slow postoperative recovery following common-duct drainage following prolonged obstructive jaundice. The patient expired at 5:30 p.m., March 18, 1954.

POST-MORTEM

At post-mortem examination, the right lung weighed 1,000 grams, the left 640 grams. In the mid-portion of the bronchus to the right lower lobe there was a bronchogenic carcinoma measuring 2.8 by 1.5 by 3 cms. The tumor projected into the lumen. The head of the pancreas was enlarged by nodular masses of tumor tissue. The mass measured 19 by 7 by 4 cms. with smaller adjacent nodules. The pancreatic duct was compressed. A tumor nodule near the ampulla measured 4.5 by 2 cms. The right adrenal was enlarged three times its normal size and was almost replaced by tumor tissue. The left adrenal was normal. The brain weighed 1,500 grams and showed metastatic carcinoma masses: one in the left parietal region, which measured 2 cms. and was hemorrhagic; one at the base of the frontal lobe, which measured 1.3 cms.; and another projecting into the horn of the right lateral ventricle, which measured 1 cm. in diameter. Posterior to the left parietal brim there were smaller masses in the left occipital lobe. In the left cerebellar hemisphere there was a mass of hemorrhage filling an area measuring 2 cms. in diameter, and posterior to this there was a firm tumor measuring 1.7 cms. in diameter. Microsection of the bronchial tumor showed it to be an anaplastic, oat-cell type. The pancreas showed erosion and metastasis of carcinoma with similar histologic appearance. There was compression and atrophy of the adjacent pan-

creatic tissue. Cerebral and cerebellar metastases were similar in structure as were the right-adrenal and liver metastases.

DISCUSSION

According to two large recent autopsy series the incidence of metastases from bronchogenic carcinoma to the pancreas varies from ten to fifteen percent. Therefore the pancreas is a comparatively uncommon site of metastases for bronchogenic carcinoma. Extra-pulmonary metastases develop in the liver, adrenals, bones, abdominal lymph nodes, pleura, pericardium, kidney, diaphragm, cervical nodes, and G.I. tract more frequently than in the pancreas. Abrams, Spiro, and Goldstein, reporting on the metastases of carcinoma in general in an analysis of 1,000 autopsy cases, list 160 cases of carcinoma of the lung. In this group 40 percent revealed liver metastases, 55 percent adrenal metastases, 22.5 percent kidney metastases, and 10 percent to the pancreas. An earlier, large series reported by Ochsner reveals in general similar percentages, the incidence of pancreatic metastases being if anything somewhat lower than the figure reported by Abrams et al. A recent report by Halpert, Fields, and DeBakey stresses the frequency of cerebral metastases from carcinoma of the lung (30 of 92 autopsied cases).

The increasing number of deaths from bronchogenic carcinoma in hospitals over the past few years makes us believe that cases similar to the above will appear in the literature. However, a cursory review of the last five years of such literature reveals few reported cases specifically mentioning metastatic bronchogenic carcinoma in the pancreas manifesting itself by obstructive jaundice. Undoubtedly many cases of metastatic bronchogenic carcinoma terminally develop jaundice, but in most of them the diagnosis of primary bronchogenic carcinoma is obvious. An unusual feature of our cases was the complete ignorance of the primary disease in the lung before autopsy.

SUMMARY

Two cases of occult bronchogenic carcinoma with pancreatic metastases producing jaundice are reported. In both instances autopsy revealed small primary lesions in the lungs and widespread metastases. These cases are of interest because they demonstrate the capacity of occult primary lung carcinoma to cause obstructive jaundice. At operation the first case was thought to have a primary carcinoma of the pancreas; the second was diagnosed as probable common-duct obstruction produced by stenosis of the ampulla of Vater and chronic pancreatitis secondary to biliary reflux. It is worth noting that two cases presenting jaundice of this type were considered to require surgical relief in a seven-month period in this hospital. The pathological findings and the metastatic sites of cancer of the lung are discussed. These two cases appear timely because of numerous and rather alarming articles concerning the marked increase in carcinoma of the lung appearing in both the lay and medical press.

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The Journal of the Maine Medical Association

THOMAS A. FOSTER, M. D., Portland, Editor

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THE PRESIDENT'S MESSAGE

Functions of the President

The Constitution and By-Laws of the Association define the duties of the President in rather general terms. He is deluged with communications on some rather minor matters. He is official greeter of visiting firemen, invited to attend meetings of various allied professions and sometimes a mediator of disputes. My own conception of the office is that he should survey the general scene and call the attention of his constituents to matters which are errors of omission or commission in general policy not only in the State but in some National relationships. In this he cannot be omniscient and does not intend to be dictatorial or speak Ex-Cathedra. This JOURNAL

should be a clearing house of ideas, a forum for discussions and an airing place for gripes. Suggestions and criticisms are invited. Dr. Foster will, I know, be only too glad to run a "Letters to the Editor" column. A County Society or a State Association without something to argue about is a dead organization.

ROBERT W. BELKNAP, M. D.,
President, Maine Medical Association.

The opinions expressed above are naturally the personal ones of the President. They are on subjects which he feels should engage the thought of the Association. He does not presume to assert they are the final word and in fact they are offered as a means of stimulating discussion. Comments favorable or unfavorable are invited in the Letters to the Editor column.

Current Trend in Programs

The one-hundredth and first annual meeting of the Maine Medical Association, held at the Samoset Hotel in Rockland, June 13, 14 and 15, now becomes a part of the cherished records of the Association. Mingled with the golf and social gatherings, important organizational business was dispatched and serious, informative medical subjects were presented. It would not be an overstatement to declare that the "indoor Clam-bake" was a happy and social high-point.

Two hundred and sixty-three members registered and the attendance at the House of Delegates was satisfactory. Neither the registration nor the delegate representation established any numerical records. The reports to the House were received attentively. The Council Chairman's report gave a narrative account of the Council's work during the past year

and brought to the delegates convincing evidence of the multiple problems which arise during a year and require thoughtful consideration. In the House the Cline Report brought many proponents and opponents to their feet. The instructions to the delegate to the A.M.A.; instructions to vote against lifting the tabled report from the table and failing in that procedure to vote against the report, were reached after a searching discussion of the report. Delegates from many sections, Dover-Foxcroft, Rumford, Cumberland, York and Penobscot, arose to shed strong light on the proposal. The meeting of the House was a lively one and a careful review of attendance at previous meetings may show that the '54 meeting was a record breaker. The count for Monday was 29 delegates out of a possible 37 and 11 alternates.

Continued on page 199



ROBERT W. BELKNAP, M. D.

President, Maine Medical Association

1954 - 1955

ROBERT W. BELKNAP, M. D.**President, Maine Medical Association****1954 - 1955**

Dr. Belknap assumed his duties as President of the Maine Medical Association at the close of the 101st annual session on June 15, 1954. Dr. Belknap has served the Association as Councilor for the Third District and on numerous Standing and Special Committees. He is a member and Past President of the Lincoln-Sagadahoc County Medical Society and a member of the American Medical Association. He has long been associated with the Miles Memorial Hospital in Damariscotta, Maine, and served as Chief of Staff for a number of years.

Dr. Belknap was born in Damariscotta, September 1, 1890, the son of Samuel C. and Susie Cotton Hall Belknap. He was graduated from Lincoln Academy and Bowdoin College, received his medical degree from Harvard Medical School in 1917, and interned at Mt. Auburn Hospital (formerly Cambridge Hospital), Cambridge, Massachusetts.

He served in the U. S. Navy during World War I, from April, 1917, to November, 1919, following which he established his practice in Damariscotta. He married Martha Chapman of Damariscotta in 1917. They have six children including Dr. Samuel Belknap of Damariscotta.

We feel that the Association has shown a good deal of foresight in its choice of Presidents in the past and that we have again made a wise choice. We look forward to a good year with Dr. Belknap in the President's chair and urge whole-hearted coöperation from all members of the Association.

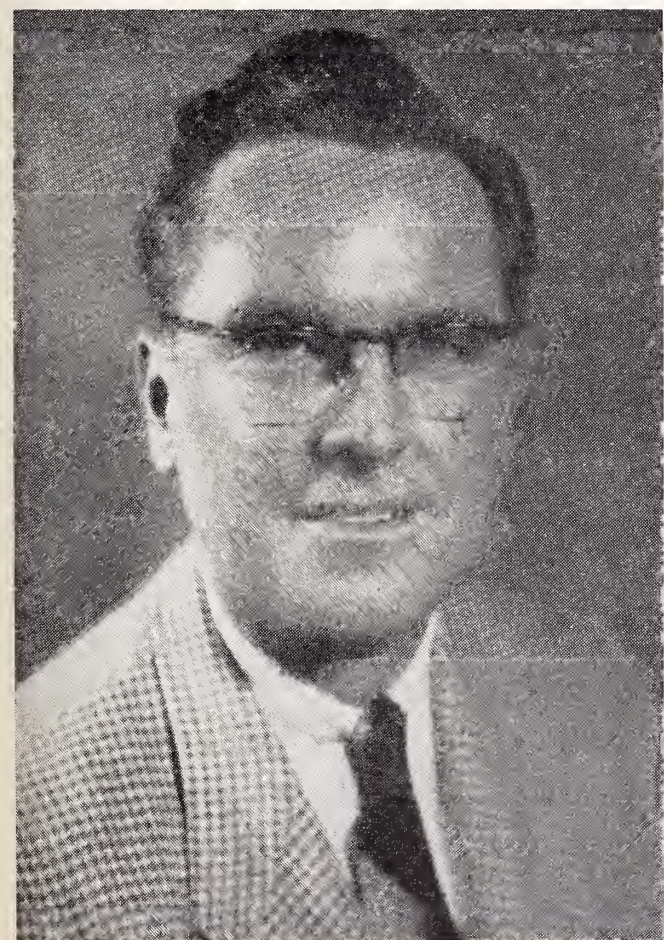
Current Trend in Programs—Continued from page 196

The Scientific Program arranged to fulfill the suggestion of a large proportion of the membership presented excellent papers on general subjects. We heard Dr. Goldbloom from Montreal give a witty and scholarly review of Infant Feeding during the last 50 years; Dr. Richard Cattell an essay with slides on *The Management of Thyroid Diseases*; Dr. Theodore Badger of Boston, *Rest, Exercise and Chemotherapy in Treatment of Tuberculosis*; and Dr. Donald Coulton of Bangor, *Controlled Labor*. The attendance at these sessions was gratifying. In addition to the above mentioned feast of general medical fare, the Maine Heart Association offered a timely Clinical Program and the Maine Medico-Legal Society presented one of their combined programs with Dr.

Richard Ford and some of his revealing slides, concluding with an address by Attorney-General Louis Wyman of New Hampshire.

The after-dinner speakers, Mr. Leonard Read on Sunday evening and Dr. Cyrus H. Maxwell, Tuesday night, dwelt alike on the current medico-economic scene but from entirely different angles. Both held the attention of the audiences while impressing them with the trend to the welfare State and the dangers of governmental controls.

The representatives in charge of the technical exhibits, whose attractive booths occupied much of the lobby, gave the occasion a convention atmosphere and seemed to be in the best of humor although the weather was not as cheerful as it was in 1952.



WILLIAM F. MAHANEY

President-elect, Maine Medical Association

Dr. Mahaney of Saco, was elected President-elect of the Maine Medical Association at the General Assembly on Monday, June 14, 1954, during the 101st Annual Session at The Samoset, Rockland, Maine.

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COUNTY SOCIETY NOTES

Washington

A regular meeting of the Washington County Medical Association in conjunction with the St. Croix Medical Society was held on Wednesday, May 26, 1954, at the Charlotte County Hospital, St. Stephen, New Brunswick. There were sixteen members and guests present.

Dr. E. O. Thomas, president of the St. Croix Medical Society, introduced the guest speaker, Dr. Neil Swinton of Boston, Massachusetts, whose subject was Rectal Diseases. Dr. Swinton spoke on the various diseases and skin conditions peculiar to the rectal area and the present day treatments for those conditions. He also spoke on the treatment of hemorrhoids and of varicose veins. His talk was followed by a period of active discussion.

The society then retired to DeMonts Restaurant in Calais, Maine, for an excellent dinner of roast beef.

In the evening the members of the society and their wives were guests of Dr. and Mrs. John Metcalf in Calais.

KARL V. LARSON, M. D.,
Secretary.

NEWS AND NOTES

Veterans Administration of Maine*

Home Town Care for Veterans

To Members of the Maine Medical Association:

On June 30, 1954, the Veterans Administration will terminate its contract with the Veterans Care Department of the Associated Hospital Service of Maine and enter into a contract with the Maine Medical Association. Requests for treatment or other services commencing on July 1, 1954, should be sent directly to the Chief, Outpatient Service, Veterans Administration Center, Togus, Maine. During June, each doctor formerly under contract with the Associated Hospital Service of Maine will receive instructions concerning the use and proper processing of the new forms necessitated by this change.

The Veterans Administration of Maine and the employees of the Outpatient Service in particular extend to the Associated Hospital Service their deep appreciation of the service rendered during the past several years by the Veterans Care Department in acting as the intermediary between the physicians of Maine and the Veterans Administration.

M. L. STODDARD,
Manager.

* The above notice, which was sent in with a request that it be published in the June JOURNAL, arrived too late for publication in that issue.

To School Nurses and Teachers

There will be a course in Audiometric Testing for school nurses and teachers at Colby College, Waterville, August 16-21, 1954.

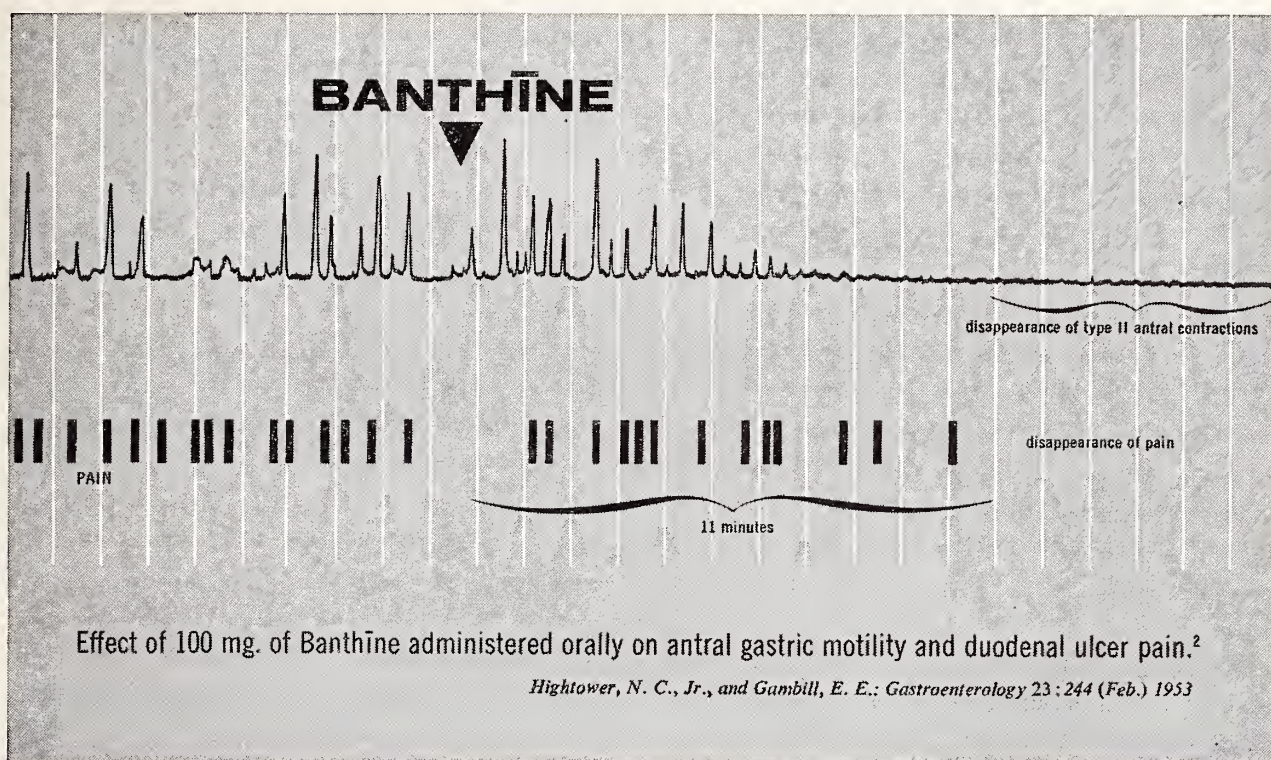
Credits will be given for the course.

Applications for enrollment with advance deposit should be sent to Professor Ralph S. Williams, Director, Division of Adult Education, Colby College, Waterville, Maine.

Caleb Fiske Prize

The Trustees of what is considered America's oldest medical essay competition, the Caleb Fiske Prize of the Rhode Island Medical Society, announce as the subject for this year's dissertation "*Modern Developments in Anesthesia.*" The dissertation must be typewritten, double spaced, and should not exceed 10,000 words. A cash prize of \$250 is offered.

For complete information regarding the regulations write to the Secretary, Caleb Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence 3, Rhode Island.



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The effect on motor activity is generally more pronounced and less variable than on secretion; pain relief is usually prompt; a high degree of effectiveness is noted in ambulatory ulcer patients.

Ruffin, J. M.; Texter, E. C., Jr.; Carter, D. D., and Baylin, G. J.: *J.A.M.A.* 153:1159 (Nov. 28) 1953.

With its proved anticholinergic effectiveness, Banthine has been found extremely useful in the medical management of active peptic ulcer, whether duodenal, gastric or marginal.

The immediate increase in subjective well-being and the simplicity of the Banthine regimen assures patient cooperation. The recommended initial therapeutic dose is 50 or 100 mg. (one or two tablets) every six hours around the clock, with subsequent individual adjustment. The usual measures of diet regulation, rest and relaxation should be followed.

Banthine is effective in other conditions caused by excess parasympathetic stimulation. These include hypertrophic gastritis, acute and chronic pancreatitis, biliary dyskinesia and hyperhidrosis. Banthine is contraindicated in the presence of glaucoma and should be used with caution in the presence of severe cardiac disease or prostatic hypertrophy.

Banthine® bromide (brand of methantheline bromide) is supplied in scored tablets of 50 mg. and in ampuls of 50 mg. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

**Department of Health and Welfare
Division of Maternal and Child Health
(Including Services for Crippled Children)
Clinic Schedule — July Through December, 1954**

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: July 12, Aug. 9, Sept. 13, Oct. 11, Nov. 8, Dec. 13.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: July 16, Aug. 20, Sept. 17, Oct. 15, Nov. 19, Dec. 17.

Rumford — Community Hospital, 1.30-3.00 p. m.: Sept. 15, Dec. 15.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Oct. 28.

Rockland — Knox County Hospital, 1.30-3.00 p. m.: Aug. 19, Nov. 17 (Wednesday).

Machias — Normal School, 1.30-3.00 p. m.: July 7, Oct. 13.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.: 1.00-3.00 p. m.: July 14, Sept. 14, Nov. 3.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: July 13, Nov. 2.

Fort Kent — Peoples Benevolent Hospital, 10.00 a. m.-1.00 p. m.: Sept. 15.

**Bangor* — Eastern Maine General Hospital, 1.30-3.00 p. m.: July 22, Sept. 23, Nov. 18.

Augusta — Augusta General Hospital, 1.00-3.00 p. m.: Aug. 26, Dec. 23.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: July 23, Aug. 27, Sept. 24, Oct. 22, Nov. 19, Dec. 17.

CLEFT PALATE EVALUATION CLINICS

Portland — City Dispensary, India Street, 10.00 a. m.: Aug. 10, Nov. 9.

PEDIATRIC CLINICS

**Bangor* — Eastern Maine General Hospital, 1.30 p. m.: July 23, Aug. 27, Sept. 24, Oct. 22, Nov. 19, Dec. 17.

**Waterville* — Thayer Hospital, 1.30 p. m.: July 6, Aug. 3, Sept. 7, Oct. 5, Nov. 2, Dec. 7.

**Presque Isle* — Northern Maine Sanatorium, 1.30 p. m.: July 21, Sept. 22, Nov. 17.

* Several of the Pediatric Clinics, and also Bangor CC Clinics, will be two-session clinics.

By Appointment Only

Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Mansfield Clinic, Thayer Hospital. 3rd Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Caribou, Houlton, Lincoln, Machias, Rockland and Rumford. The Portland Clinic is open daily with a staff of 1 psychiatric social worker and 1 psychologist. The psychiatrist is in attendance on Tuesdays. The other clinics are staffed by a psychiatrist and a psychologist.

Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.

Maine Trudeau Society

A Maine Trudeau Society, affiliated with the American Trudeau Society and to serve as the medical section of the Maine Tuberculosis Association, was organized during the recent annual meeting of the Medical Association. Purposes of the society will be to give medical advice and guidance to the state and local tuberculosis and health associations, to advance generally the medical education of all physicians on diseases of the chest, and to be available for medical consultation purposes to other agencies conducting tuberculosis control or related programs.

Dr. Lester Adams, Greenwood Mt., Superintendent, Western Maine Sanatorium, was elected society president. Serving with Dr. Adams are Dr. Albert Aranson, Portland, vice president, and Dr. Brinton T. Darlington, Augusta, secretary. Dr. Darlington

was also named society delegate to the board of directors of the state tuberculosis association, and Dr. George E. Young, Skowhegan, was named as state representative on the Advisory Board of the American Trudeau Society.

Physicians attending the organization meeting were: Lester Adams, Forrest B. Ames, Albert Aranson, Frank W. Barden, Frederic B. Champlin, Brinton T. Darlington, David Davidson, Gisela K. Davidson, Samson Fisher, Francis J. Kadi, George Loewenstein, Edward S. O'Meara, William A. Ventimiglia, George W. Wood, III, and George E. Young.

All members of the American Trudeau Society are automatically members of the state society and the 25 physicians who signed the original petition to the ATS to form a state group are charter members.

NECROLOGY



Walter E. Tobie, M. D.

1869 - 1954

With sorrow, we record the death of Dr. Walter E. Tobie, which occurred at his home in Portland on March twenty-first, 1954, at the age of eighty-four years.

Dr. Tobie was born in Lewiston, Maine, December 13, 1869, but has been a resident in Portland since 1873. As a young man he was a devoted cyclist and competed with success in various races and long club runs. Before studying medicine he was employed in several drug stores and gained wide acquaintance as a pharmacist at Guppy's, one of Portland's busiest pharmacies.

Dr. Tobie graduated from the Bowdoin Medical School in 1899 and served his internship at the Maine General Hospital. He then entered into general practice in Portland and became especially interested in Surgery, in which practice he was very active up to a few years ago. From 1903 to 1916 he was associated with the Department of Anatomy at the Bowdoin Medical School, first as demonstrator, then as lecturer and

finally, in 1906, he became full professor and held that chair until 1916. In 1916, he was elected Professor of Surgery and that position he held until 1921 when the Medical School closed.

Dr. Tobie was a senior surgeon of the Maine General Hospital Staff for several years but in his later life he became interested in the Maine Eye & Ear Infirmary and was a director of that hospital, intensely active in its improvement and success.

Dr. Tobie will be remembered by countless of his students as a most excellent teacher and by his colleagues as one of the fine surgeons of the State. By his intimates he will be long remembered for his humor and quick witticisms.

In June, 1949, Dr. Tobie received the Fifty-Year Medal from the Maine Medical Association so that he was a member of that Association all his medical life.

PHILIP P. THOMPSON, SR., M. D.

TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

Current Trends In Tuberculosis

By Mary Dempsey, Statistician, National Tuberculosis Association, February 3, 1954.

Probably more persons are under treatment for tuberculosis today than was ever before the case in this country. Most people are aware that the gradual decline in tuberculosis mortality has increased precipitately for the past few years; others know that the incidence of the disease is declining slowly; very few are conscious, however, that large and even increasing numbers of patients are coming under treatment.

Two factors help to account for the high prevalence of tuberculosis today—or rather for the high prevalence of KNOWN cases. Since 1945, tuberculosis case-finding activities have been carried on in many places and on a large scale. As a result a higher proportion of existing cases has been found than was previously known. The great majority (we hope) are receiving treatment.

Primarily as a result of new kinds of treatment patients who would have died young now live until their disease is arrested. This fact with the augmented case finding has resulted in more patients under treatment than were previously known, even though morbidity and mortality are declining.

A sharp distinction should be made between incidence and prevalence. The annual incidence is the number of new cases which develop in a year; the prevalence of tuberculosis is the number of existing cases on any given date.

Slow decline in new reported cases.—The fact that today more patients with active tuberculosis are under care than ever before does not mean that there is any increase in the incidence. The number of new cases is declining slowly, while the total of all known cases is showing a tendency to increase. During the period 1946-1948 mass community X-ray surveys were successful in locating a backlog of cases, many of which should have been reported years earlier; as a result, the number of new cases reported showed a definite increase. At that time, this advance was erroneously thought to represent a true rise in tuberculosis morbidity. Subsequent developments have confirmed the opinion that no actual increase had occurred.

The number of new cases reported has declined appreciably during the last two years. In 1952 the total number of new cases reported to health departments in the United States was 109,837, of which 85,607 were active or probably active.

Large numbers of cases are still unreported; but each year sees many cases reported which should have been known to health authorities years before. Probably fewer inactive cases will be reported in the future, now that agreement has been reached on the definition of a reportable case.

Decline in mortality.—Fifty years ago the tuberculosis death rate was 188 per 100,000 while today it is less than one-tenth that figure. Every agency and individual who has been interested in tuberculosis control shares in the credit for this sensational drop in mortality.

A second achievement rarely noted is the advancing age at death for those who died of tuberculosis. In 1924, the median age at death was 33.3 while in 1950 it was 49.7. Tuberculosis is rapidly becoming a disease of older men. Today half of all deaths from tuberculosis in this country are those of men 40 years of age and older.

The accelerated decline in tuberculosis mortality which has occurred recently is usually attributed to new forms of treatment. The use of excisional surgery and antimicrobial drugs have kept alive many who would otherwise have died from this disease. Some of them remain sputum-positive and the necessity for isolation is as urgent as ever. Thus, with a greatly lowered death rate from tuberculosis we have more patients under treatment than ever before.

Home care programs.—According to reports from widely separated states, the introduction of isoniazid has led to the establishment of home care programs for the tuberculous. We are told—rather indefinitely, it is true—that large numbers of patients are being treated at home with the result that vacant beds are reported from communities which once had long waiting lists. Is this a transitory occurrence? Or is it the beginning of a sustained trend toward home treatment? Today, no one seems able to answer these questions.

At this stage of development, organized home care programs under close supervision by clinics and public health nurses appear to offer a partial solution of the involved tuberculosis problem in large cities where health administration is highly organized. It is difficult to understand why such a program is needed or can prove successful in smaller communities which lack adequate clinic and public health nursing facilities.

Only time will tell how well the carefully supervised home care programs turn out. If the suspicion proves warranted that some patients are receiving drug treatment at home or at work with inadequate or no supervision, one does not know what to expect in the near future. Will these patients improve under such treatment? Or will they seek admission to tuberculosis hospitals in the near future? Are they spreading the disease? No one knows what is happening now nor do they know what will come next.

Cost of tuberculosis.—The excessive cost of the tuberculosis problem has seldom been faced by law-making bodies or health organizations. It is conservatively estimated that each case costs approximately \$15,000; this amount includes cost of medical and nursing care, health education, case finding, rehabilitation, loss of the patient's wages, compensation, pensions, and relief payments to the patient's family while he is incapacitated. If the loss of patient's productive capacity and potential future earning power were included, the cost per case would be doubled.

One reason for the high estimated cost per case is the tendency toward relapse or reactivation which is an outstanding characteristic of this chronic disease. The average cost of maintaining a patient during his second or third hospital stay is from two to four times the cost of maintenance during his first stay. Many patients, especially those whose disease was not far advanced, have been treated by bed rest only during their first stay. When they return to the hospital, surgical treatment is often considered necessary. Some patients who have refused to accept surgical intervention will agree to it after readmission.

Cause and effect of poverty.—Few of us realize that tuberculosis is both a cause and an effect of indigency. It is simple to grasp the fact that poverty lowers resistance so that the disease spreads rapidly when families live on an inadequate or unbalanced diet, are crowded into insanitary homes, can obtain little education. But we do not always stop to think how directly tuberculosis leads to poverty in families where it did not previously exist. A recent study of a sizable group of patients pointed out that less than two per cent of the patients' families were relief recipients at the time of diagnosis; upon being admitted to hospitals a few months later, 16 per cent were receiving public assistance. At the time of hospital discharge 50 per cent of the families of these same patients were on relief.

Estimates of the overall annual loss from tuberculosis in this country run to as much as six hundred million dollars. Even this astronomical sum does not include the cost of hospital construction, depreciation of hospital buildings, or the training of professional personnel.

(The printing of Tuberculosis Abstracts is made possible by the coöperation of your local tuberculosis and health association.)

* From Vol. XXVII, July, 1954, No. 7.

AUDITOR'S REPORT

JOSEPH STILLMAN
 Certified Public Accountant
 97a Exchange Street
 Portland 3, Maine

June 10, 1954.

MAINE MEDICAL ASSOCIATION,
 142 High Street,
 Portland, Maine.

Gentlemen:

I have examined the accounting records of the Maine Medical Association for the fiscal year ended May 31, 1954, and all related data and information pertinent thereto. I have found the records to be in order and all funds properly accounted for.

In my opinion, the enclosed exhibits, balance sheet, and statement of income and expense, with supporting schedules, present the true financial condition of the Maine Medical Association as of May 31, 1954, and the results of its operation for the fiscal year then ended.

Yours truly,

JOSEPH STILLMAN.

EXHIBIT A
Maine Medical Association
Balance Sheet
As at May 31, 1954

ASSETS	
Cash in Hand and in Banks (See Schedule III)	\$19,070.64
Accounts Receivable:	
Dues	\$1,295.00
Women's Auxiliary	92.88
Advertising — JOURNAL	1,128.60
Miscellaneous — JOURNAL	130.00
	<hr/> 2,646.48
Securities (See Schedule VII)	17,102.99
Furnishings and Equipment	1,092.59
Accrued Interest Receivable	161.66
Prepaid Expenses:	
Annual Session	\$43.01
Treasurer's Bond	5.00
Postage and Mailing	5.31
	<hr/> 53.32
Trust Fund Investments (See Schedule II)	3,647.10
	<hr/>
Total Assets	\$43,774.78
LIABILITIES	
Accounts Payable	\$1,003.37
Due for Social Security and Withholding	196.44
Due American Medical Association for Collection of Dues	160.00
Deferred Income:	
Convention Exhibit Space	1,212.00
	<hr/>
Total Liabilities	2,571.81
Excess of Assets over Liabilities	<u>\$41,202.97</u>
CAPITAL AND FUNDS	
Capital Account (See Schedule I)	\$37,555.87
Trust Funds (See Schedule II)	3,647.10
	<hr/>
Total Capital and Funds	<u>\$41,202.97</u>

EXHIBIT B
Statement of Income and Expense
For the Year Ended May 31, 1954

INCOME	
Dues	\$22,011.00
JOURNAL (See Schedule IV)	11,914.57
Centennial Session (Exhibits)	2,481.00
Investments (Schedule V)	700.38
Gain on Province of New Brunswick Bonds — Called	42.95
American Medical Association for Collection of Dues	137.25
	<hr/>
Total Income	\$37,287.15

EXPENSE

Executive Secretary's Office (See Schedule VI)	\$11,551.51
Secretary-Treasurer's Office (See Schedule VII)	5,674.14
JOURNAL (See Schedule IV)	11,620.78
General:	
Centennial Session	\$3,424.27
President's Expense	425.00
Councilors' Expenses	536.29
Legal Advisory Committee	1,000.00
Other Committees	267.47
Delegates — New England Medical Societies	231.27
Delegates — American Medical Association	589.40
Clinical Sessions	244.56
New England Council Dues	100.00
Women's Auxiliary	150.00
Annual Rosters	182.00
	<u>7,150.26</u>
Total Expenses	35,996.69
Net Income for the Period	<u>\$1,290.46</u>

SCHEDULE I

Capital Account

For the Year Ended May 31, 1954

Balance, June 1, 1953	\$36,265.41
Additions to Capital:	
Net Income for the year ended May 31, 1954 (Exhibit B)	1,290.46
Total	<u>\$37,555.87</u>
Deductions from Capital:	
None	— 0 —
Balance, May 31, 1954, per Exhibit A	<u>\$37,555.87</u>

SCHEDULE II

Trust Funds and Trust Fund Investments

May 31, 1954

TRUST FUND INVESTMENTS

Prince A. Morrow Trust:	
36 Shares American Agricultural Chemical Co. (Cost)	\$ 348.00
Canal National Bank Savings Book No. 3905:	
Balance, June 1, 1953	\$2,094.04
Add: Dividends Received	162.00
Interest on Savings	43.06
	<u>2,299.10</u>
	\$2,647.10
Thayer Library Trust:	
Canal National Bank Savings Book No. 3903:	
Balance, June 1, 1953	\$1,271.34
Add: Interest on Savings	12.71
	<u>\$1,284.05</u>
Less: Withdrawals:	
For Spalding Memorial Library, Maine	
General Hospital	\$ 284.05
For Purchase of Portland Terminal	
Company Bond	1,000.00
	<u>1,284.05</u>
	— 0 —
Portland Terminal Company 4% First Mortgage	
Bond, 1961	\$1,000.00
	<u>1,000.00</u>
Total Trust Fund Investments	<u>\$3,647.10</u>

TRUST FUNDS

Prince A. Morrow Fund:	
Principal	\$ 554.94
Income	2,092.16
	<u>\$2,647.10</u>
Thayer Library Fund:	
Principal	1,000.00
Total Trust Funds	<u>\$3,647.10</u>

SCHEDULE III
Schedule of Cash Receipts and Disbursements
For the Year Ended May 31, 1954

Cash Balance, June 1, 1953	\$19,565.82
Cash Received From:	
State Dues	\$21,483.00
JOURNAL Portion of State Dues	1,302.00
JOURNAL Advertising	9,927.70
JOURNAL Miscellaneous	213.09
Exhibit Space Rentals	1,998.00
Investments	743.99
Province of New Brunswick Bond, Called	1,041.40
Centennial Session Tickets and Miscellaneous	2,048.50
Miscellaneous (Refunds, Transfers, etc.)	177.25
Employees for Social Security and Withholding	2,238.26
Members for American Medical Association Dues	11,195.00
Total Cash Received	52,368.19
Total Cash	\$71,934.01
Cash Disbursements:	
Executive Secretary's Office:	
Salaries	\$9,096.00
Travel Expense	861.05
Office Expense	1,465.21
	\$11,422.26
Secretary-Treasurer's Office:	
Salaries	\$4,000.00
Travel	35.18
Office	1,818.55
	5,853.73
JOURNAL:	
Salaries	\$ 500.00
Printing and Plates	10,338.68
Office Expense	581.27
	11,419.95
Social Security and Withholding Taxes	2,472.64
General Expenses:	
Centennial Session	\$5,029.20
Legal Advisory Committee	1,000.00
President's Expenses	425.00
Women's Auxiliary	242.88
Miscellaneous (Delegates, Councilors, Committees, Clinical Sessions, etc.)	1,976.55
	8,673.63
Purchase of Securities—Guaranty Trust Co. Stock	1,014.36
American Medical Association for Members' Dues	11,910.00
Miscellaneous (Refunds, Transfers, etc.)	96.80
Total Cash Disbursements	\$52,863.37
Cash Balance, May 31, 1954	\$19,070.64
Canal Bank — Checking Account	\$16,437.92
Canal Bank — Special Checking Account for American Medical Association Dues	269.17
Maine Savings Bank Book No. 7751	1,602.80
Cash Undeposited — Deposited in June	760.75
	\$19,070.64

SCHEDULE IV
Schedule of Journal Income and Expense
For the Year Ended May 31, 1954

INCOME	
JOURNAL Portion of State Dues	\$ 1,334.00
Advertising:	
State Journal Advertising Bureau	\$9,057.21
Local Advertising	1,180.27
	10,237.48
Miscellaneous Income and Subscriptions	343.09
Total Income from JOURNAL	\$11,914.57

EXPENSE

Salaries:	
Editor	\$ 500.00
Other Expenses:	
Printing and Plates	\$10,524.04
Trucking and Mailing	454.96
Telephone and Office Expense	70.45
Social Security Taxes	8.76
Miscellaneous	62.57
	<u>11,120.78</u>
Total Expenses	<u>\$11,620.78</u>

Note: Above items of expense do not include any portion of salaries of Secretary-Treasurer, rent and lights, since no part of these expenses have been allocated specifically to the JOURNAL.

SCHEDULE V
Schedule of Income from Investments
For the Year Ended May 31, 1954

Income From:	
Interest:	
United States Government Bonds, Series "G"	\$150.00
Portland Terminal Company Bonds	150.00
Province of New Brunswick Bonds	39.75
Province of Nova Scotia Bonds	37.50
Bangor and Aroostook Bonds	45.00
Jacksonville Gas Corporation Bonds	40.00
Maine Savings Bank	39.33
	<u>\$501.58</u>
Dividends:	
Central Maine Power Co. — Preferred	\$42.00
Consolidated Edison Co. of New York — Preferred	50.00
Chase National Bank	50.00
First National Bank of Boston	50.80
Telfair Stockton Company, Inc. — Common	6.00
	<u>198.80</u>
Total Income from Investments	<u>\$700.38</u>

SCHEDULE VI
Schedule of Executive Secretary's Office Expense
For the Year Ended May 31, 1954

Salaries:	
Executive Secretary	\$7,000.00
Stenographer	2,096.00
	<u>\$ 9,096.00</u>
Travel Expense:	
County Societies	\$150.33
American Medical Association Meetings	541.28
Other Council and Committee Meetings and Conferences	269.44
	<u>961.05</u>
Office Expense:	
Rent and Lights	\$457.29
Stationery Supplies and Postage	422.41
Telephone	306.86
Social Security Taxes	104.58
Subscriptions, Books and Periodicals	102.16
Miscellaneous Expense	101.16
	<u>1,494.46</u>
Total Expenses	<u>\$11,551.51</u>

SCHEDULE VII
Schedule of Secretary-Treasurer's Office Expense
For the Year Ended May 31, 1954

Salaries:	
Secretary-Treasurer	\$4,000.00
Travel Expense	35.18
Office Expense:	
Rent and Lights	\$457.31
Stationery, Postage, and Office Supplies	518.67
Telephone	256.73
Auditing	225.00
Social Security Taxes	62.36
Advertising	30.00
Subscriptions, Books and Periodicals	18.00
Miscellaneous	70.89
	<u>1,638.96</u>
Total Expenses	<u>\$5,674.14</u>

SCHEDULE VIII
Schedule of Securities
May 31, 1954

	Face	Cost
Bonds:		
United States Government Bonds, Series "G", Due July 1, 1956	\$4,000.00	\$ 4,000.00
United States Government Bonds, Series "G", Due March 1, 1961	2,000.00	2,000.00
Portland Terminal Company, 5% First Mortgage Bonds, 1961	3,000.00	3,045.00
Province of Nova Scotia, 3¾% Bonds, 1971	1,000.00	995.00
Bangor and Aroostook, 4¼% First Mortgage Bonds, 1976	1,000.00	860.00
Jacksonville Gas Corporation, 4% First Mortgage Bonds, 1969	1,000.00	1,025.00
Stocks:		
12 Shares Central Maine Power Co., 3½% Preferred, \$100 par		948.00
10 Shares Consolidated Edison Co. of New York, Inc., Cumulative Preferred, No par		1,090.00
25 Shares Chase National Bank		1,040.63
21 Shares The First National Bank of Boston		1,049.36
15 Shares Guaranty Trust Company of New York, \$20 par		990.00
20 Shares Telfair Stockton & Company, Inc., Common, \$4 par		60.00
2 Shares Prudence Bond Corporation		0.00
Total Securities		<u>\$17,102.99</u>

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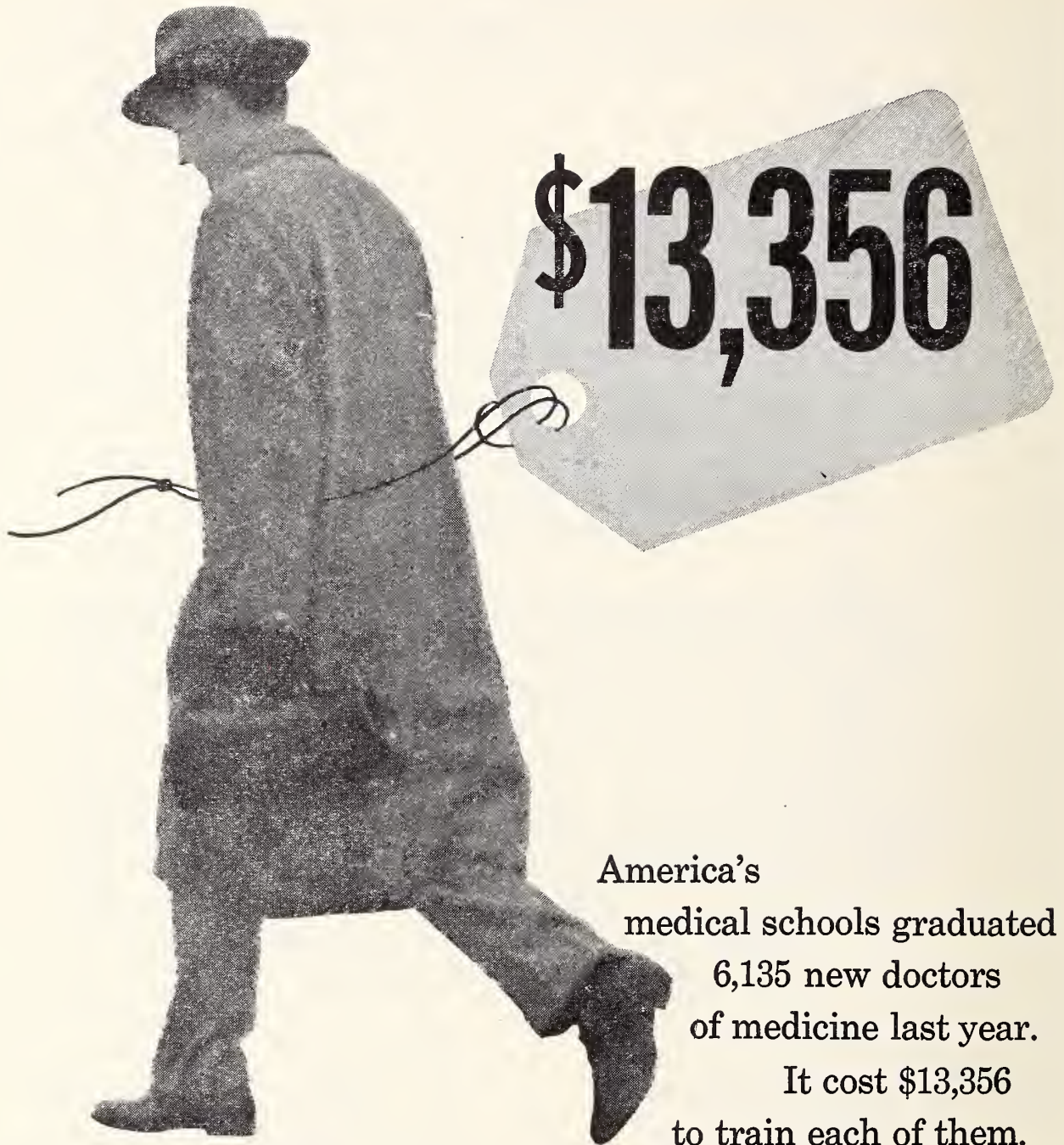
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JOSEPH THIMANN, M. D., *Medical Director*

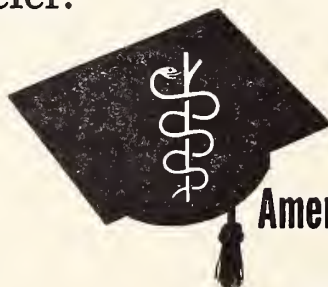
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of medicine last year.

It cost \$13,356
to train each of them.

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American Medical Education Foundation

535 North Dearborn Street, Chicago 10



The Journal of the Maine Medical Association

Volume Forty-Five

Portland, Maine, August, 1954

No. 8

PRESIDENT'S ADDRESS*

NORMAN H. NICKERSON, M. D., Greenville, Maine**

This is a very happy occasion for me. I am about to become a Past President of the Maine Medical Association. I certainly have enjoyed being President of the Maine Medical Association more than I would being President of the U. S., but even so I am more pleased to become a Past President.

It has been a pleasure to visit the various County Medical Associations. This pleasure could be enjoyed by every member of our Association. I am sure the Aroostook County Medical Association would welcome any visitor. A ride to Bethel Inn in Oxford County in the fall is beautiful. The hospitality of Franklin County Medical Association cannot be exceeded. A visit to the Somerset County Medical Association where Frank Ball of Bingham fed venison and trout, all you could eat of either or both to the entire Association, and guests, with George Young leading the singing, was an evening never to be forgotten. The 100th Anniversary meeting of the Penobscot County Association and the meeting of the Kennebec County Association at Togus. These meetings I have mentioned as examples of the pleasure that can be had by attending not only your own County meetings but by visiting other County Associations as well as attending the Fall Clinical Session of the Maine Medical Association and the New England Post-Graduate Assembly. Incidentally do not limit your visits to the various County meetings. One of the most interesting meetings I attended was the

Canadian Medical Association Division of Quebec at Three Rivers. The morning papers were delivered in French. The afternoon papers in English. They had the same translation system as is used at the United Nations we were told. On each chair was a head phone; in the back of the room a glass booth; three men were there. One read a translation of the paper as it was delivered; one apparently monitored the reader so that when the speaker finished a sentence the one who was translating finished at the same time. The other apparently controlled the volume to the earphones. While there I was told that the Province of Quebec is about three times the size of the State of Texas and the city of Montreal larger than Boston. I understand, however, that the boys from Aroostook still claim the county is larger.

Last night while trying to think what I should say to you tonight, I read Dr. Hiram Hunt's presidential address which was delivered to the Maine Medical Association in 1903, 51 years ago. I read this because Dr. Hunt was my uncle and I would like to quote some from this president's address of 51 years ago:

"In the ever pressing endeavor to keep abreast of modern developments we are apt to neglect the profitable and fascinating study of medical history. Yet a comprehensive knowledge of medical history is as essential to the physician as a knowledge of his nation's history is invaluable to the statesman; and in the study of medical history, noting the successive steps by which the magnificent structure of modern medical science has been reared, noting the enthusiastic body of men in every age and nation engaged in

* Presented at the 101st Annual Session of the Maine Medical Association, June, 1954.

** President, Maine Medical Association, 1953-1954.

advancing medical science, we must be impressed with the greatness of the profession of medicine. We must become more imbued with the true spirit of the profession, its aims and high ideals, we must necessarily be stimulated to greater effort in upholding the honor of the profession wherever we may work in the great field of medicine.

"It seems incredible that so great progress could be accomplished in the past fifty years; more than in all the centuries before.

"In the words of Tennyson—

'Science moves but slowly.
Slowly creeping, creeping on
From point to point.'

"Such is our ordinary conception of science in its irresistible progress, but looking backward on the past fifty years science seems to have been leaping from pinnacle to pinnacle rather than creeping from point to point. (Please remember this was written 51 years ago. Who can vision what the next 50 years will show.)

MEDICAL SOCIETIES

"In colonial days the benefits to be derived from medical societies so appealed to the medical men of those times that early in the history of the nation, while yet the country was sparsely settled, and the members of the profession few, medical societies were formed. The first medical society in the United States was the Philadelphia Medical Society, formed in 1765. It lived three years. The oldest still existing is the medical society of New Jersey, organized in 1766. Up to 1797, sixteen medical societies had been formed; among this number were the Massachusetts State in 1781, New Hampshire in 1791, and Connecticut in 1792.

"After 1800 the number of Societies rapidly increased until in 1821 was organized the Maine Medical Society. It is not my purpose to review any part of the interesting history of this pioneer Society, with the exception of an abstract taken from the JOURNAL of this Society published in 1834. In the introduction of this JOURNAL Moses Shaw, for the committee, says: 'In furthering the objects of the Society, one of the first questions that presented itself for the discussion of the members was the expediency of forming a medical library, but the location of most of the members being so distant from the necessary location of a library, it was thought the members would not get a satisfactory return, and a JOURNAL was decided upon as offering to all the members a more equal benefit. One object of the JOURNAL is to interest distant members. Members of any association are apt to complain that they pay their annual tax without receiving any equivalent in return.' And he goes on to say, 'Let us impartially inquire whose fault this is. Is not the fault generally at the door of the complainant himself?'

"In order to obtain that intellectual benefit from a society which he thinks himself entitled to, is it sufficient for him merely to pay his annual assessments in money and stop here? Can the complainant in such case expect to receive benefit from that intellectual source to the supply of which he has contributed nothing?

"I have introduced this abstract from the old JOURNAL of 70 years ago (now 121 years ago) because the possible complaint of a member that he has not received any equivalent in return is as worthy of consideration today as it was 70 years ago. The question is, has the Maine Medical Association returned to its members an equivalent for the time they have devoted to the Association and the accompanying expense? The answer to this question is necessarily the answer to the question of the non-member, who asks, 'of what benefit will membership in the Maine Medical Association be to me?'

BENEFITS OF THE ASSOCIATION

"The benefits of Medical Association are manifold. Perhaps the most important is the intellectual or educational value.

"There is one characteristic of our profession peculiar to it, and that is the eagerness of its members to give to the profession any discovery, any new instrument, method of treatment or operation, diagnostic aid or remedial agent, in fact to give to the profession anything which may prove of value in advancing the art and science of medicine. This fact is appreciated by all medical men, and what better channel is there through which to approach the profession than the Medical Association? The mere fact that the association is so generally adopted shows the attitude of the profession on this point.

"The Medical Association is the great clearing house of medical thought. The distributor of medical knowledge; the equalizer of medical culture. The ever increasing number of medical societies indicates the laudable desire of the members of the profession, both to impart to others, and in return receive all recent medical advance. Medical journals are also important disseminators of knowledge — but the Journals have to depend on the societies for a large part of their contents. The Journals have grown in keeping with the increased number of societies. It is interesting to note in this connection that in 1847 Dr. Oliver Wendell Holmes reported twenty medical journals, and spoke of the 'Inordinate Fecundity' in this department. Today there are ten times this number of regular medical journals. Very many of them are organs of associations, and special societies. As the journals have to depend on the Associations so the Associations have to depend on the Journals to reach a larger number of physicians than could be reached by the Association alone.

"The first object of this Association, as stated in the Constitution, is 'Mutual Professional Improvement.' Has the Association fulfilled this object? Has the Association given to its members a satisfactory intellectual return? To answer these questions intelligently requires a knowledge of the literary work of the Association as found in the transactions; the addresses; titles of papers, character, authors, scope of discussion, disputants, etc., a critical review of which is beyond the scope of this address. Such a review will show that the papers have been timely and able, the discussions interesting and instructive, and must convince any Judge that the Maine Medical Association has been true to its avowed object, 'Mutual Professional Improvement,' and has returned to its members an intellectual equivalent.

"The Medical Journal, no matter how valuable its content, is of no value to the man who does not read it; just so the Association is of no intellectual value to the member who will not avail himself of its benefits. Another value of the Association is—

FRATERNAL OR SOCIAL

"This is the part of life which we are apt to neglect; too often from jealousy, prejudice, or the meddling interference of the public, the relations between adjacent medical men are not the most cordial. The spirit so often manifested is not the broad, liberal spirit so becoming to members of the humane profession of medicine. The social side of the medical meeting, if properly utilized, has a wonderful effect in restoring and promoting harmony among its members. Old friendships are renewed, new acquaintances made and the member returns to his work refreshed, but in the social as in the intellectual, the value in respect to the individual member, largely depends on the member himself. He cannot expect a satisfactory return unless he avails himself of the opportunities which the Association offers. A third value is

POLITIC, OR VALUE OF ORGANIZATION

"It must be conceded that the majority of medical reforms and laws, both written and unwritten, regarding medical matters, have been secured largely through the agency of organized medical bodies, and in some instances the medical organization has been due to the recognized need of some body influential enough to cope with the situation.

"J. Collins Warren, in his address at the Centennial of the Massachusetts Medical Society said: 'The fundamental idea which brought about the formation of the American Medical Association was the improvement of Medical Education.'

"Medical colleges between 1830 and 1845 more than doubled. Sixteen weeks was generally adopted as the length of the college year, and some had thir-

teen. The whole system of medical education was becoming demoralized, and it needed an organization with more power than isolated individual influences to place medical education on a firm basis.

"Individual influence is not extensive enough to accomplish much in moulding public opinion or securing needed legislation. The American Medical Association was organized in 1847, and until 1874 the medical colleges were represented in the Association by delegates. The Association is, and has been, of decided value to the profession in many ways. As Dr. Gordon, one of the delegates to the American Medical Association, said in his report in 1901, 'this is now the leading medical society of the country.' It publishes one of the best medical Journals, and the Association is clearly entitled to the support of the profession.

"To enumerate the various legislative medical acts in our own state, in which this Association has been an influential factor in procuring, would encroach on the province of the historian of the Association. It is safe to say that without the influence of the Association many of the laws would not have been passed, or at least their enactment delayed. These laws were passed for the good of the public, and whatever is for the benefit of the public must necessarily be for the benefit of the profession. Consider, if you will, the chaotic condition medical practice would be in today but for wise legislation. Unlike the intellectual and social benefits of the Association, which require on the part of the member an active participation in order for him to receive an equivalent return in this direction, the benefits are shared by all the members, whether they have actively participated in securing the needed reforms or not. The benefits secured by organization, as we enjoy them today, are sufficient to render the members indebted to the Association rather than the Association indebted to the members. Not alone the members, but every practitioner in the state shares in these benefits. The non-member who asks, 'of what benefit will it be to me to join the Maine Medical Association,' is at the time quietly participating in all the benefits largely secured by the Association to which he has contributed nothing. We have considered three of the many benefits which the Association has been to its members. In these directions the Association has returned to its members an equivalent; the members have no cause for complaint, the non-members can have no reasonable excuse for withholding their support."

Under Legislation Dr. Hunt advocated inspection of school children and schools, both as to pure air, light and heating.

He prophesied that in future years, Our own State Laboratory will be a great help in dealing with the preventable diseases and states it is not creditable to

Continued on page 236

MEDICAL MANAGEMENT OF THE SURGICAL DIABETIC*

A Statistical Analysis of 500 Patients

E. R. BLAISDELL, M. D., F. A. C. P.

Before the days of insulin, surgery in the diabetic was a hazardous procedure, and one might add that before the era of antibiotics and modern anesthesiology it was still attended with a comparatively high mortality rate.

From the amount of data available, it is apparent that until recent years the mortality rate was unusually high except in a few specialized clinics where several well-trained clinicians and technicians were in constant touch with their patients around the clock. Even in the present day one finds very little in the literature concerning the surgical mortality rate in the general hospital without university affiliation. It is assumed that affiliated hospitals have a sufficient number of well-qualified professional personnel to administer more or less constant supervision over the patient which is so important in the surgical diabetic. As late as 1950, Silbert and Haimovici¹ were able to obtain but very little specific recent data on the mortality rate in amputations in the major hospitals in this country.

In a comparative study of the meager reports in operative mortality in diabetes, one should take into consideration the years during which these figures were obtained. For instance, it is unfair to compare the work of an author who compiled his statistics from surgery done in 1940 or perhaps as late as 1945 with that of another who based his reports on surgery done since 1950.

MORTALITY RATES

In Joslin's² ideally organized clinic,** there was a reduction in over-all mortality from 11.5 per cent in 1926 to less than 2 per cent in 1950. Williams and O'Kane,³ whose studies extended over a period of five years from 1931 to 1935, noted a drop in mortality rate from 50 per cent to 20 per cent when all of the surgery was done by one surgeon and all medical care was in the hands of one medical man, a factor which is probably of considerable importance. Even as early as 1939, Sprague and Wilder⁴ reported an over-all mortality rate of only 4.3 per cent. In 1944 Palmer, Mangham, and Booth⁵ reported a major amputation mortality rate of 30.6 per cent; but this was over a period of 15 years, a larger part of which time antibiotics were not available. The majority of the reports found by Silbert and Haimovici were on surgery done prior to 1942. One series, however, was in 1949, two in 1947, one in 1946, and one in 1945. The mortality rate from all authors in this survey ranged from 11 per cent to 60 per cent with an

average of 27 per cent. In the same article, these authors reported from their own clinic the results of recent amputations for gangrene in 172 patients with a mortality rate of 9.3 per cent. Interestingly, this was compared with amputations in 41 cases of gangrene in non-diabetics in whom the mortality rate was 9.7 per cent. In late 1951, Cochrane and Gross⁶ in discussing "Medical Problems in Diabetic Surgery" reported operative results in 62 patients whom they divided into two groups. The first group of 25 patients was operated upon from July 1, 1945, to December, 1947; and in this group with four deaths very little attention was paid to the blood protein level, the CO₂ combining power, the urea nitrogen or to evaluation of the cardiac status. All received routinely 2,000 c.c. to 3,000 c.c. of glucose in normal saline daily for two or three days; whereas in the second group of 37 patients operated upon between 1948 and 1950 with only one death, the evaluation omitted in the first group was carried out and the patient received only 1,000 c.c. of glucose in distilled water daily during the first 48 hours, supplemented with blood transfusions and protein hydrolysates when necessary. In 1952 Rolland,⁷ of the Department of Therapeutics at the Royal Infirmary in Edinburgh, states that in 1948, 1949 and 1950, 300 surgical patients were treated in his clinic with a mortality rate of 9.3 per cent which he compares with a mortality rate of 6.9 per cent among 1,000 non-diabetic surgical patients treated in one of the surgical sections during the same period. He calls attention to the younger age of the non-diabetic and to the importance of vascular accidents as a cause of death in the diabetic group.

I am sure that anyone who has treated any sizable group of surgical diabetics during the past five years will agree with Rolland that the vast majority of deaths are vascular in origin. It is taken for granted that the treatment of the diabetes per se has been properly handled. Good surgery, the various antibiotics, and modern anesthesiology would seem to have gone as far as possible at the present time in lowering the mortality rate, and it remains for the medical man to attempt to prevent some of the vascular accidents.

AUTHOR'S GROUP

The present group of patients to be reported number 500 surgical diabetics, the majority of whom were

**Dr. Howard F. Root (in a recent personal communication) expressed his opinion that the mortality rate of amputations is bound to run 4 to 5 per cent due to the incidence of coronary occlusion and pulmonary embolism.

*From the Medical Service of the Maine Medical Center.

operated upon at the Maine General Hospital. Three hundred^{8, 9, 10} of these patients have already been reported in a series of 100 patients each. This number includes only those treated by the writer as service or private patients, and it has been somewhat of a hobby since 1935 when pertinent data on the first patient

was collected. None were included unless the disease was severe enough to require insulin. The first series appeared in 1938, the second series in 1941 and work on the third series began at this time only to be interrupted shortly by the outbreak of World War II and not resumed until the beginning of 1946.

TABLE I
DIABETIC OPERATIONS (1935-1938)*

Total Operations	Number 100	Deaths 16	Cause of Death
Major Amputations	41	10	{ 6 from Sepsis
Minor Amputations	0		{ 4 from Surgical Shock
Other Operations	59	6	{ 4 from Sepsis
Average Age	59		{ 2 from Pulmonary Embolism
Average Daily Insulin (u)	39		

*In a sixth series with 60 patients studied there has been no deaths, but there was only one amputation above the ankle.

TABLE II
DIABETIC OPERATIONS (1938-1941)

Total Operations	Number 100	Deaths 8	Cause of Death
Major Amputations	17	3	{ 2 from Sepsis
Minor Amputations	12		{ 1 from Strangulated Hernia
Other Operations	71	5	{ 3 from Sepsis
Average Age	60		{ 2 from Pulmonary Embolism
Average Daily Insulin (u)	41		

TABLE III
DIABETIC OPERATIONS (1946-1948)

Total Operations	Number 100	Deaths 4	Cause of Death
Major Amputations	10	1	from Cerebral Thrombosis
Minor Amputations	8	3	{ 1 from Cerebral Hemorrhage
Other Operations	82		{ 1 from Uremia
Average Age	61		{ 1 from Congestive Heart Failure
Average Daily Insulin (u)	39		

TABLE IV
DIABETIC OPERATIONS (1948-1950)

Total Operations	Number 100	Deaths 5	Cause of Death
Major Amputations	9	1	Massive Hemorrhage from Duodenal Ulcer
Minor Amputations	11	4	{ 2 from Pulmonary Embolism
Other Operations	80		{ 1 from Coronary Thrombosis
Average Age	62		{ 1 from Cerebral Thrombosis
Average Daily Insulin (u)	40		

TABLE V
DIABETIC OPERATIONS (1950-1952)

Total Operations	Number 100	Deaths 5	Cause of Death
Major Amputations	6	2	{ 1 from Coronary Thrombosis
Minor Amputations	12		{ 1 from Pulmonary Embolism
Other Operations	82	3	{ 1 from Mesenteric Thrombosis
Average Age	62		{ 1 from Coronary Thrombosis
Average Daily Insulin (u)	42		{ 1 from Uremia

In reviewing these tables the most outstanding finding is the complete disappearance of sepsis as a cause of death after 1941. To be sure sulfa drugs were available during most of the period between 1935 and 1941 but it was necessary to use them cautiously due to their toxic effect upon the blood and kidneys in an older age group where blood dyscrasias and kidney disease are common complications. If we omit sepsis as a common cause of death in the first two groups, we find that the mortality rate differs very little from that in the later groups. If we accept this at its face value, it could be assumed that antibiotics in a moderately well controlled surgical diabetic was all that was necessary to obtain good results. It should be stated here that the surgical diabetic in these series was handled just as carefully in 1935 to 1938 as in 1952. We had well organized and well staffed diet kitchens in the earlier periods as well as a comparatively larger nursing staff. Our laboratory facilities were good for the time. Blood was available and used freely when necessary and we were alert to the importance of an adequately but not overhydrated patient whose diabetes was moderately well controlled. Furthermore, and very important, the patients have received the same competent surgical treatment throughout the entire period. We did not have, however, the advantage of the more recent laboratory tests especially for blood potassium and blood sodium and did not recognize the importance of the electrocardiogram in electrolyte imbalance. To have known this may have saved the lives of the four patients in Group I who were said to have died from surgical shock.

CLINICAL ASPECTS

In our possible overenthusiasm for laboratory data, one should not lose sight of the clinical aspects of the patient. Occasionally, one sees an overhydrated patient who by laboratory standards is still lacking in fluids. We should remember that the average surgical diabetic is past sixty years of age and presumably has had diabetes for many years. Consequently, he probably has generalized arteriosclerosis with varying degrees of damage to the brain, heart and kidneys, and a tendency towards deep phlebitis and secondary anemia.

The patient should first have a complete physical examination and then as many of his defects treated as time will permit. I should like to emphasize the importance of a good history and physical examination which should also include evaluation of the diabetic status, chest survey, complete blood count, urea nitrogen, stool examination and probably an electrocardiogram. To do elective surgery on a patient with a recognizable carcinoma in some other part of the body or on one with advanced kidney disease is at least disturbing to the surgeon and frequently disastrous to the patient. If the urea nitrogen is ele-

vated, a blood CO_2 combining power and electrocardiogram should be done both of which may be abnormal due to nausea and vomiting and kidney insufficiency. This will lead to the necessity for doing sodium and potassium studies. With the revived popularity of the low sodium, saltfree diets, one should be on the lookout for evidence of sodium depletion which may not manifest itself until 24 or 48 hours after surgery. An attempt should be made to find the cause of anemia which is common in the older age groups; this is frequently on a nutritional basis the treatment for which is an adequate diet, iron and possibly blood transfusions, the latter being especially helpful in healing of lesions of the lower extremities.

If there is a history of cardiac edema, intravenous sodium chloride should be given cautiously but is not contraindicated when necessary to maintain normal hydration. An accurate intake and output of fluids is extremely important, and daily blood analyses for sugar, urea nitrogen, sodium and potassium may be helpful to both the internist and surgeon in preventing cardiovascular and renal accidents. The conventional treatment for all forms of heart disease is indicated here as elsewhere.

EMERGENCIES

I realize that so far in this paper nothing has been said about the acute surgical emergencies, the various insulins or dietary management. It is needless to say that the patient should not be sent to the operating room dehydrated and with heavy glycosuria and acetone in his urine. If possible, two or three days of preoperative treatment are advisable. In such emergencies as a ruptured viscus, etc., heroic measures may be necessary; in these instances continuous intravenous fluids, transfusions and frequent doses of the quicker acting insulins will be the sheet anchors for the medical man. The vast majority of diabetic patients coming to the hospital today for surgery are already taking insulin and are on some kind of a diet. Inquiry should be made as to the kind and amount of insulin, whether it has been taken on the day of admission, and what type of a diet has been used. Different clinics have different methods of treating even those who have had elective surgery. Some prefer a six-hour schedule around the clock for both insulin and feedings in all patients until three or four days post-operatively when all agree that one should standardize the patient for discharge. In this series of 500 patients, frequent insulin injections and night feedings were used only in acute emergencies where it was not practicable to wait for good standardization with long acting insulin. In those entering the hospital already taking long acting insulin, the same amount of carbohydrate was continued insofar as possible to evaluate and the same

amount of long acting insulin supplemented with additional quicker acting insulin as needed. One should remember that healing of a clean wound in itself usually increases the insulin requirement 15 to 20 per cent. Those patients who undergo major surgery are usually fed intravenously during the first two or three days after surgery and following this period the usual carbohydrate intake can be given divided in doses with as much fluid and minerals as are necessary to maintain the electrolyte balance. In some instances, and unless the patient has had gastric surgery, it may be advisable to use a stomach tube through which adequate calories can easily be administered.

FACTORS AFFECTING MORTALITY RATE

Although our figures show that the reduction and mortality rate has resulted from the removal of sepsis, the type of surgery has changed somewhat during the last 15 years. For example, there has been an increase in hip nailing which is frequently a long and tedious operation and would, I believe, have increased our mortality had it not been for the improved technique in anesthesia, our newer conception of electrolytes and a better understanding of the cardiovascular problem in the diabetic.

SUMMARY

In summary, data has been presented on 500 surgical diabetic patients. There has been a reduction in mortality rate from 16 per cent in 1935 to from 4 to

5 per cent in 1946. Indeed in our sixth series on which we are now working there have been no deaths in 60 patients treated. If 500 patients are sufficiently large a number from which to form any definite conclusion, it can be said that any further decrease in mortality rate will depend upon improvement in the prevention and treatment of cardiovascular and kidney diseases.

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DUPLICATION OF THE RENAL PELVIS AND URETER

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Ureteral and pelvic duplication is a common congenital anomaly. The incidence in the literature is recorded as low as 0.51% and as high as 10%. In a series of 16,000 autopsies reviewed by Nation the incidence was 0.7%. The condition is of practical importance because of the frequently associated impairment of urinary drainage from the involved kidney. This stasis of urine causes hydronephrosis or invites infections which are frequently persistent and damaging.

DESCRIPTION

There are several variations in form of ureteral and pelvic duplication. The condition is both unilateral and bilateral, the former being the most common. (1) In partial duplication the ureters may join at any point along the course of the ureter. At the point of juncture there is frequently stenosis of the ureter draining the upper pelvis. Some authors have stated that the junction usually occurs 3 to 5 cms. proximal

to the ureterovesicle junction but analysis of larger series of cases reveals equal distribution along the entire course of the ureter. (2) In complete ureteral duplication, the ureters do not join but have separate ostia in the bladder. The extra ureter, usually the one draining the upper pelvis, is frequently ectopic; in the female ending in the vagina, urethra, cervix, uterine cavity or gartners duct; in the male ending in the posterior urethra, seminal vesicles, ejaculatory duct or vas deferens.

Duplication of the ureter and renal pelvis is frequently referred to as "double kidney." It is rare that there are two renal masses individually drained by a renal pelvis and ureter. At times there is an indentation indicating a point of cleavage between the two segments but usually the external appearance is that of a normal kidney. The two pelves are usually disproportionate in size, the upper being the smaller usually representing one calyx. The two pelves are always in the same relative position, one being above the other.

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The two ureters bear a fairly constant relationship in the descent to the bladder, usually being closely bound together in a single sheath with the external appearance of a normal single ureter. The ureter draining the upper pelvis enters the bladder lower (i.e., nearer the bladder neck) than the ureter draining the lower pelvis. Hence the upper ureter must cross the lower ureter. It usually does this in the lower one-third of its course and at the point of crossing there is frequently obstruction of the upper ureter. The two ureteral orifices at times are separated only by a thin septum of mucous membrane, while in other instances there is several millimeters distance between them. The orifice of the ureter draining the upper pelvis is commonly as stenotic as it enters the bladder or as it enters some ectopic position.

EMBRYOLOGY

The cause of this anomalous development cannot be offered but it does have an embryological explanation. The collecting portion of the kidney, made up of collecting tubules, calyces, pelvis and ureter arises as a bud from the lower end of the Wolfian duct just cephalad to its entrance into the cloaca. This bud

grows cephalad into the metanephric mesenchyme which is destined to become the secretory portion of the kidney. The end of the ureteric bud dilates to form the renal pelvis and subsequently divided dichotomously to form the remaining portion of the collecting system. If the ureteric bud should divide prematurely in its ascent to the metanephric mesenchyme incomplete duplication of the ureter and renal pelvis results. Should two ureteral buds arise from the lower end of the Wolfian duct, complete duplication of the ureter and renal pelvis results. In the male the portion of the Wolfian duct caudad to the ureteral bud becomes the ejaculatory duct, posterior urethra, vas deferens and seminal vesicles. The extra ureteric bud frequently arises from this area, thus giving an explanation of an ureter ending ectopically in the above mentioned organs of the male. This part of the Wolfian duct becomes portions of the urethra, vestibule and anterior vaginal wall in the female, thus explaining ectopic ureters ending in these organs. It is interesting to note that in the male the ectopic ureter ends proximal to the external urinary sphincter while in the female the ectopic ureter ends distal to the external urinary sphincter. This explains why females with ureteral ectopia have constant dribbling



FIGURE #1: Case #1: X-ray taken 90 minutes after injection of dye. Note low relative position of the left kidney which is ordinarily higher than the right. There are fewer calyces on the left than on the right. Complete duplication of the left ureter and pelvis with pyonephrosis of the upper pelvis was found at operation.

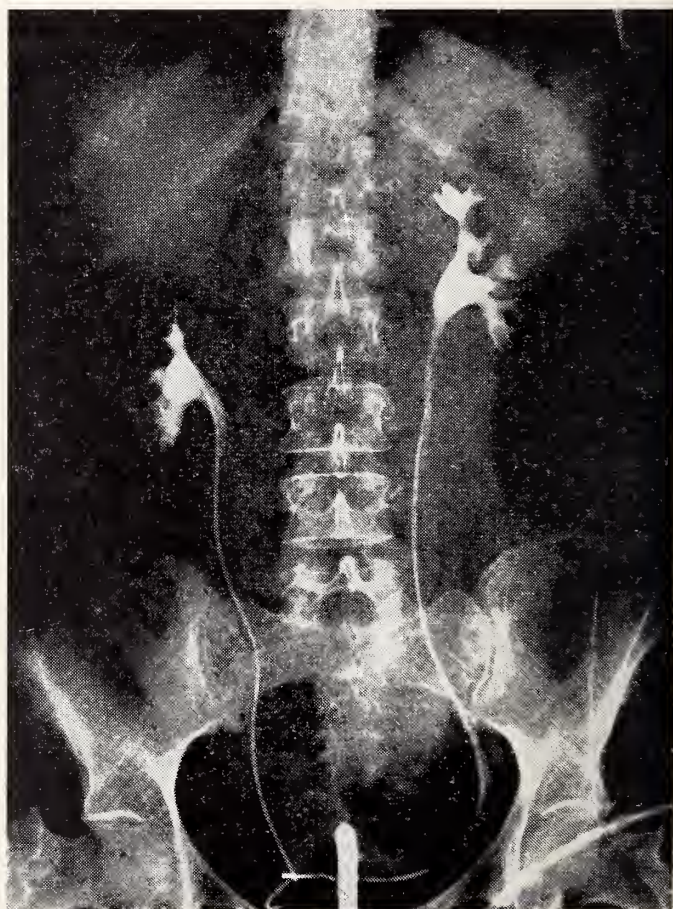


FIGURE #2: Case #2: Retrograde pyelogram showing low position of right renal pelvis. Right pelvis appears small for size of renal shadow and there are fewer calyces than seen on the left. See Figure #3.

of urine and why males with the condition are continent.

Robert Gutierrez has stated "40% of all pathological conditions of the kidneys and ureters are due to congenital anomalies." Anomalous organs are all prone to disease but it is particularly true of duplication of the renal pelvis and ureter. In a statistical study by Nation of 230 cases diagnosed clinically and at autopsy, approximately 37% had associated renal disease other than nephrosclerosis and glomerulonephritis. Infection varying from pyelonephritis to pyonephrosis occurred in 22%; ureterectasis, pyelectases and calyctectasis occurred in 10%; calculous disease occurred in 5%.

SYMPTOMS AND SIGNS

Stasis of urine is the disturbance in physiology that is the sine quo non of these pathological conditions. As previously stated the orifice of the ureter from the upper pelvis is frequently stenotic, whether it ends in the bladder or in an ectopic position. Obstruction of the upper ureter frequently occurs at the point where it crosses the ureter from the lower segment. Ladd and Gross state that the ureter from this lower pelvis was more frequently obstructed by this mechanism in their experience. The upper segment is also fre-

quently obstructed at the point where its ureter joins the other. There are many instances of ureteral and pelvic duplication in which the point of obstruction cannot be demonstrated clinically or pathologically, the presence of stasis being evidenced only by repeated or persistent urinary tract infections. This has led urologists to believe that duplicated ureters and pelves simply do not drain well.

There is a complete absence of symptoms in duplication of the renal pelvis and ureter unless obstruction, infection or stone formation occur. Complications occur at any age; being apparent at birth in some instances or being found late in life in other instances. Ladd and Gross collected 146 clinical and autopsy cases in infancy and childhood from 1926 to 1950 at the Boston Children's Hospital. There are many reports of cases and series of cases becoming apparent in adult life. The symptoms are those of infection and obstruction of the kidney with localizing pain, fever, pyuria and at times abdominal mass. Urinary dribbling in the female occurs when the ureter ends ectopically in the urethra, vestibule or vagina.

UROLOGICAL INVESTIGATION

The importance of urinary stasis in the pathogenesis of persistent or recurrent urinary tract infections is always stressed by writers on the subject. They

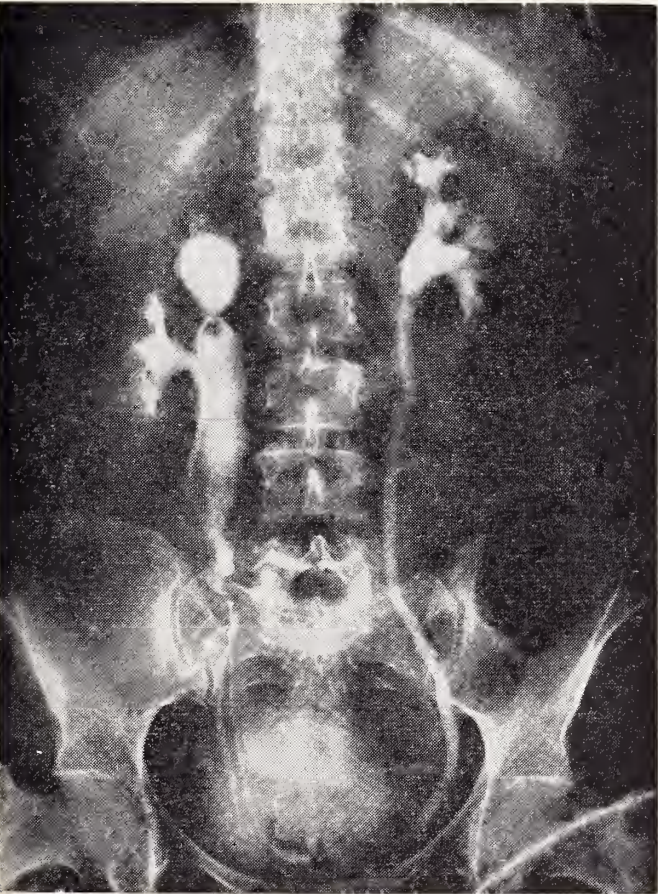


FIGURE #3: Case #2: Retrograde pyelogram with filling of pyonephrotic pelvis and dilated ureter of upper segment. The ureter was obstructed at the point where it crossed the ureter from the lower segment.

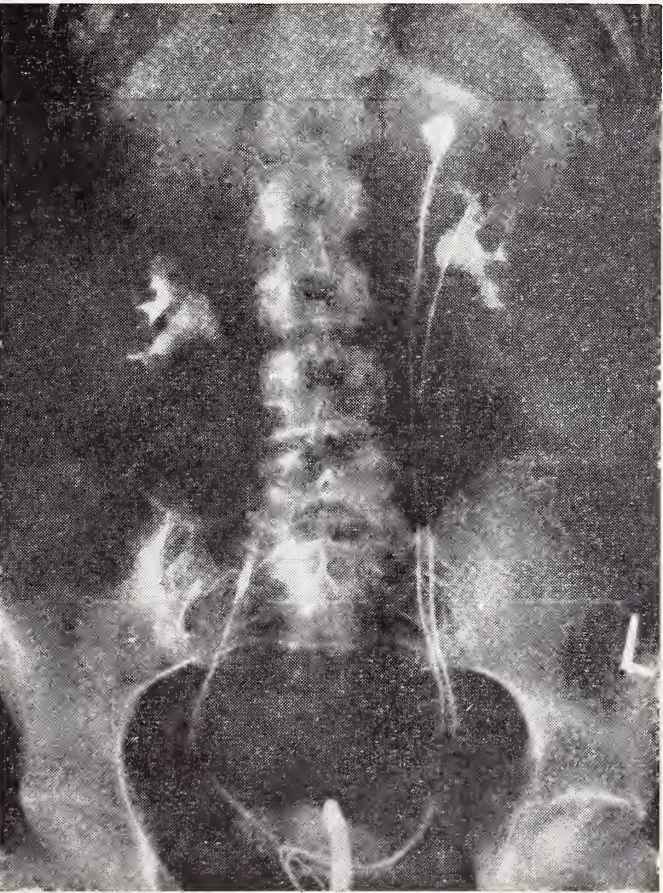


FIGURE #4: Typical uncomplicated ureteral and pelvic duplication on the left.

invariably make a plea for thorough urological investigation for obstructive lesions when urinary infection becomes a problem. Duplication of the ureter and renal pelvis is a condition frequently found when such procedure is carried out. This should include intravenous pyelography and if necessary cystourethroscopy and retrograde pyelography.

Intravenous pyelograms are diagnostic when both components are functioning. Two distinct and separate ureters and pelves on one side are well visualized in the radiographs. The diagnosis may be less apparent if the pathology of hydronephrosis or pyonephrosis is advanced and there is inadequate function for visualization of one of the involved components (usually the upper) by intravenous pyelography. There is characteristic displacement of the lower functioning component and other changes that are diagnostic. The presence of a non-functioning upper element gives the kidney the appearance of being in a lower relative position than normal. A concave deformity on the upper or lower surface of the functioning pelvis may be caused by an adjacent hydronephrotic non-functioning pelvis. The functioning pelvis appears small for the size of the renal shadow and is placed so that there is a considerable portion of the kidney without drainage system. There is usually symmetry in the number of calyces in the right

and left kidneys. Discrepancy in the number of calyces on one side suggests duplication of the ureter and renal pelvis with a non-functioning segment. (See cases #1 and 2.)

Cystoscopic or urethroscopic examination may reveal supernumerary ureteral orifices. In many instances all of the ureters can be catheterized and retrograde pyelograms establish the diagnosis. Indigo carmine dye injected intravenously may be of help in locating ectopic ureteral orifices since it has a characteristic color and is selectively excreted by the kidneys in a few minutes.

TREATMENT

Uncomplicated ureteral and pelvic duplication requires no treatment. The most frequent complication is minimal obstruction with recurrent infection. The obstructive lesions, as previously stated, is most frequently not demonstrable and rational antibiotic therapy is guided by cultural studies. Surgical therapy is indicated when secondary changes such as hydronephrosis, pyonephrosis, severe chronic pyelonephritis and stone formation occur. The disease process is usually localized to one duplicated ureter and pelvis, hence partial nephrectomy and ureterectomy is the operation of choice so that the functioning element can be preserved. The technique of this

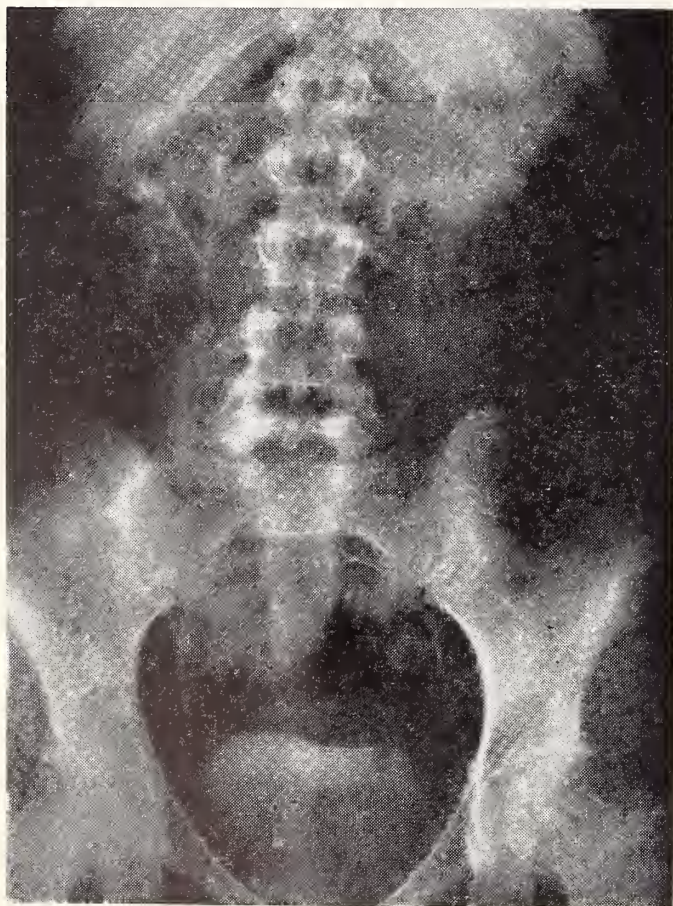


FIGURE #5: Case #4: Duplication of the right renal pelvis and ureter. The patient had had recurrent attacks of right pyelonephritis. There is no obstruction lesion apparent.

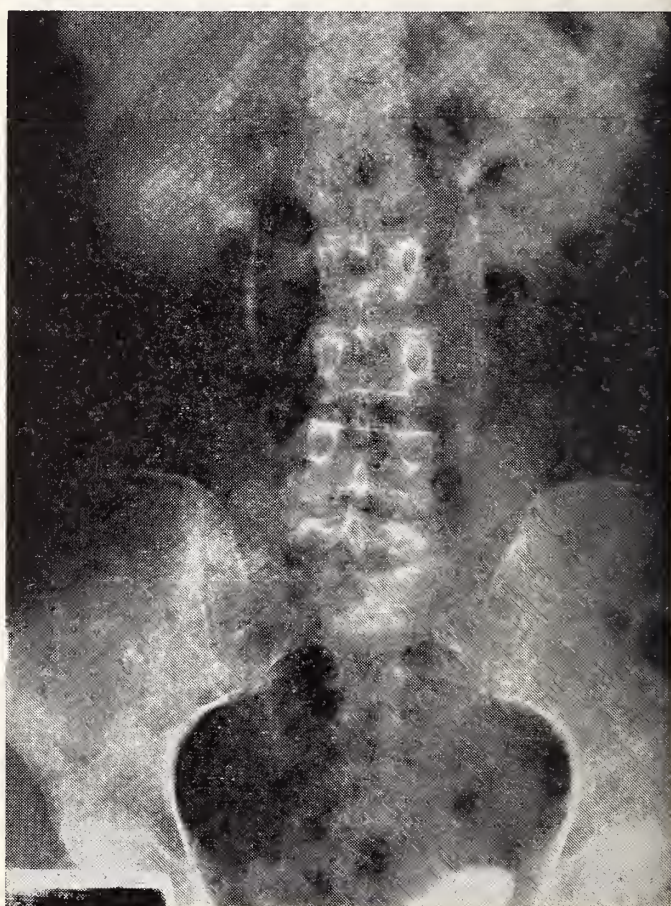


FIGURE #6: Case #5: Intravenous pyelogram on a patient with recurrent bouts of pyelonephritis revealing bilateral pelvic and ureteral duplication.

operation is not difficult. An important point of technique is the complete removal of the ureter to the point of obstruction. If infected, obstructed ureter is not removed considerable difficulty may be encountered later from pyoureter. A duplicated ureter ending ectopically is best treated by removal of the ureter and the corresponding portion of the kidney.

CASE REPORTS

CASE REPORT #1: A three-month-old female was admitted to the Maine General Hospital on October 18, 1952, because of recurrent chills and fever, failure to gain weight and vaginal discharge of six weeks duration. Upon admission the temperature was 102°. The infant appeared acutely and chronically ill. Examination of the abdomen revealed a moveable mass in the left upper abdomen with a tubular mass extending from it into the pelvis. Examination of the introitus revealed a thick yellow discharge exuding from the urethral meatus. Pressure on the abdominal mass caused a marked increase in the urethral discharge. Microscopic examination of the discharge proved it to be pus. A catheter urine examination was essentially negative. Cystoscopic examination revealed a normal bladder with two normally placed ureteral orifices. Urethroscopic examination was not successful. Intravenous pyelography revealed delayed function bilaterally with moderate dilatation of the ureters and pelvis. There were fewer calyces visualized in the left kidney than in the right kidney. The renal pelvis on the left was displaced downward and laterally.

The clinical and X-ray evidence pointed to the diagnosis of duplication of the left renal pelvis and ureter with pyoureter and pyonephrosis of the upper segment, the ureter draining this segment ending ectopically in the urethra. At operation the diagnosis was confirmed. There was a very large indurated pelvis and ureter draining the upper component and a normal ureter and pelvis draining the lower component. Partial nephrectomy was not possible because of the severe inflammatory reaction. Complete nephroureterectomy was done. The ectopic ureter ended in the urethra with a stenotic orifice. The obstructed ureter was tremendously dilated in the pelvis and this accounted for the partial obstruction of the two normal ureters. The patient made an uneventful recovery. (Figure #1)

CASE REPORT #2: A 45-year-old housewife was admitted to the Mercy Hospital on February 25, 1954, with a chief complaint of chills, fever and right flank pain. She had had several attacks and had been hospitalized on two occasions in the year previous to admission. She was told that there was pus in her urine but that the X-rays of the kidneys were normal. Physical examination was not remarkable except for severe right flank pain and tenderness. Urine examination revealed marked pyuria and B. Coli was cul-

tured from the urine. Cystoscopy revealed a markedly inflamed and edematous bladder. Normal right and left ureters were visualized and catheterized. The urine from the catheters was free from pus. Between the bladder neck and the right ureteral orifice a third orifice was seen exuding thick yellow pus. A catheter was passed and purulent urine was recovered. The X-rays were diagnostic. (Figures #2—#3) A partial nephrectomy was performed and the patient made an uneventful recovery.

CASE REPORT #3: A 38-year-old white female was seen because of recurrent bouts of frequency and dysuria. She had had one attack of right flank pain, chills and fever. She had been told on several occasions that there was pus in her urine. Physical examination was not remarkable. Urine examination was negative. Cystoscopy revealed changes consistent with chronic cystitis. Retrograde pyelograms revealed partial duplication of the left ureter and renal pelvis with obstruction of the upper ureter at the point where it joined its mate. The upper ureter and pelvis were dilated and drained poorly. Partial nephrectomy was recommended but refused by the patient.

CASE REPORT #4: A 21-year-old student nurse had recurrent attacks of right flank pain, chills and fever necessitating hospital admissions on two occasions. Physical examination revealed right flank tenderness. The urine contained pus on several occasions. Intravenous pyelograms revealed duplication of the right ureter and pelvis. (Figure #5) She was successfully treated with antibiotics.

CASE REPORT #5: A 30-year-old female had recurrent attacks of bilateral costovertebral angle pain and tenderness, fever and pyuria. Intravenous pyelograms revealed bilateral duplication of the renal pelvis and ureters. (Figure #6) She was successfully treated with antibiotics.

SUMMARY

Duplication of the renal pelvis and ureter is a common congenital anomaly. The complications of the condition are obstruction and infection. The X-ray changes are fairly typical. It is frequently found to be a cause of obscure pyuria. Rational antibiotic therapy is usually effective. When damage to one of the components is advanced, partial nephrectomy is the treatment of choice. Five illustrative cases are presented.

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CASSETTE CHANGER FOR ARTERIOGRAPHY AND VENOGRAPHY

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The mounting importance of absolute, anatomical diagnoses in patients with peripheral arteriosclerosis obliterans, arteriosclerotic aneurysms, traumatic aneurysms, and arteriovenous fistulae, and post-phlebitic syndrome are making contrast arteriography and venography commonplace procedures. While serial roentgenograms can be obtained by multiple injection-exposure techniques the obvious problems of correct timing of radiographic exposures and the inherent dangers of the injection of large doses of any contrast media make a serial cassette changing device a necessity.

The variety of cassette changing apparatuses described in the literature attest both to man's ingenuity and to the complexity of the problem involved. These cassette changers vary from simple lead protected tunnels to very elaborate bi-plane, stereoscopic Fairchild cameras.¹⁻¹² The cassette changer described by Wehrmacker and Stocker¹³ seemed to be most adaptable for our purposes and after several modifications has proven to be an effective, inexpensive, mechanically foolproof apparatus.

DESCRIPTION OF CASSETTE CHANGER

The cassette changer is essentially a tunnel under the patient within which cassettes are placed and pushed through as the radiographic exposures are made. This apparatus (Figure 1) was made by the authors in a few spare hours in the hospital carpenter shop at a cost of approximately \$8.00. The two side pieces are 2 x 4's while the crosspieces, uprights and leaded wings are made from 3/4 inch boards. The portion of the platform on which the extremities lie is

3/8 inch plywood which is fastened from the bottom upwards into the slanting wings with screws to prevent sagging from the weight of the patient. A 14 x 17 inch Lysholm grid is placed on this plywood platform during the exposure of the roentgenograms. The entire platform stands three inches above the X-ray table and after making two 4-inch sponge-rubber mattresses to be placed on either side of the cassette changer the patients have found this device to be very comfortable. (Figure 2) All of the details of taking any arteriogram or venogram can be completely handled by two persons utilizing this cassette changer. While exposures can be made as rapidly as four in three seconds this speed is seldom necessary in angiography.

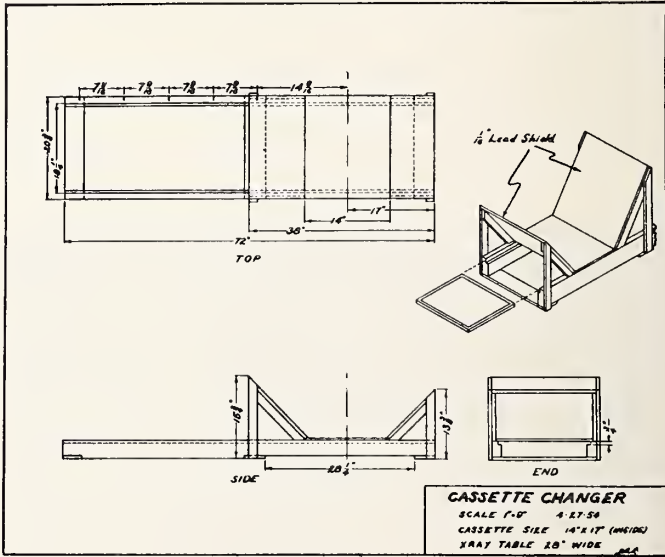


FIG. II

PROCEDURE

As the surgeon injects the contrast media the operator in one hand holds the hand switch activating the X-ray tube and with the other hand pushes the cassettes through the tunnel stopping at either the seven-inch or 14-inch marks on the cassette changer side pieces. The exposed cassettes are allowed to drop a short distance onto a small table at the opposite end of the cassette changer.

In performing aortograms, using either the trans-lumbar approach or the retrograde femoral method of catheterization of the aorta, four 14 x 17 films were exposed at one second intervals beginning just prior to the completion of the injection of the contrast media. Femoral arteriograms are performed, after first shielding the half of the cassette under the unexamined leg with a sheet of 7 x 17-inch lead-im-

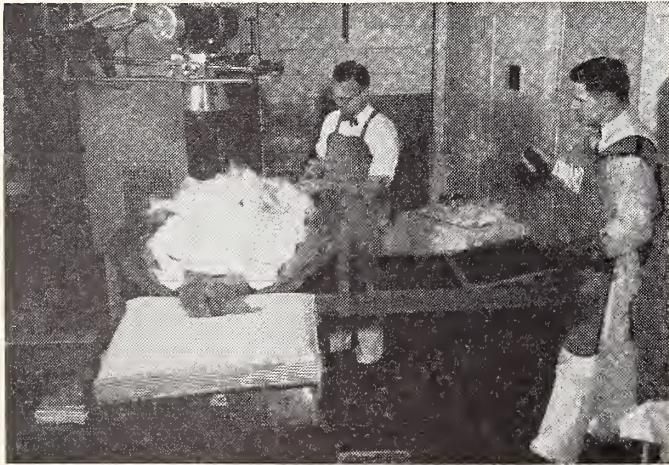


FIG. I

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pregnated rubber, by four exposures on two cassettes at four second intervals beginning at the end of injection of the contrast media. Venograms are performed with a similar technique except that the four exposures are made at five second intervals. All persons performing angiograms should protect themselves with leaded rubber aprons and gloves.

SUMMARY

A simple cassette changer has been described which is very effective and readily available to any hospital at a very nominal cost.

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BENIGN INOCULATION LYMPHORETICULOSIS
(Cat Scratch Disease)

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During the past four years there has been great interest aroused both here and abroad in the disease we now know as benign inoculation lymphoreticulosis. The first published report of this condition following the scratch of the domestic cat appeared in 1950 in the French literature and shortly thereafter the medical literature of this country fairly blossomed with case reports of this disease. It soon became apparent that, "la maladie des griffes de chat" had been under study by Dr. Lee Foshay of Cincinnati for twenty years. He had seen many such cases, had been unsuccessful in identifying the etiological agent, but had prepared a specific skin test antigen in the method of Frei which he had given to Debré for use in his studies and first published report of this disease.

This ubiquitous disease acquires its importance, as do so many other diseases, from its ability to imitate various other diseases associated with lymphnode involvement. It behooves us to become thoroughly familiar with its protean manifestations so that unnecessary surgical procedures such as biopsy or removal of involved nodes are not undertaken unless absolutely necessary.

In the past this disease has been confused with any

and all diseases producing lymphadenitis. It imitates and has many features in common with tuberculous lymphadenitis, Hodgkin's disease, tularemia, lymphogranuloma venereum, infectious mononucleosis and pyogenic lymphadenitis. However, we do have an important and conclusive diagnostic aid, namely the skin test, once our diagnosis has been suspected. This test, together with adequate history, examination and a high index of suspicion should make the study and treatment of lymphadenitis even more challenging than it has been in the past.

CLINICAL CHARACTERISTICS

The general characteristics of the disease have been described many times and although they vary greatly from case to case certain features are usually present.

Usually there is a history of contact and scratch by a cat but this is not absolutely necessary. The disease has been reported after mosquito bites, thorn scratches, splinters, licking by a cat, etc. I believe it would be correct to assume that contact directly or indirectly to a cat can be traced easily in ninety-eight percent of the cases and most of these represent cases of overt scratching.

A few days after inoculation a local ulcerative lesion appears in most of the cases. Occasionally this

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may not appear until lymphadenopathy appears or it may fail to appear at all. Regional lymphadenopathy next appears, generally within two weeks, but occasionally as long as a month later, and this may persist for weeks to months depending upon the severity of the local involvement. The proximal lymphnodes, supraclavicular, axillary, femoral, often are involved. Once involved the nodes may become fluctuant, tender and drain spontaneously a sterile pus, or they may resolve without suppuration. There is no difficulty with healing even if fistulas do appear.

SYSTEMIC MANIFESTATIONS

The response to this systemic disease is as one might anticipate. There is frequently fever varying from 101-104° F. appearing usually after very noticeable glandular swelling has been present for days to weeks. This rise in temperature is often accompanied by headache, chills, and general malaise. Occasionally there may develop a macular or vesicular rash which generally fades within a few days of its appearance. The patient withstands his illness well, rarely seems as sick as his chart would indicate and never has the lymphangitis one might anticipate. The disease is self limiting, has no important sequelae and is to date unaffected by any type of chemotherapy.

The offending virus, a member of the psittacosis lymphogranuloma venereum group, has recently been identified and the disease transmitted in the laboratory to monkeys by Mollonet and his co-workers. From microscopic sections they describe various characteristic cellular changes and have demonstrated both intranuclear and intracytoplasmic oxyphilic inclusion bodies.

It now appears also that Parinaud's oculoglandular syndrome is also a manifestation of this disease with the conjunctiva representing the primary site of inoculation.

The following cases have been seen in the past year and are considered to represent this disease.

AUTHOR'S CASES

Case #1. J. M. White, 6-year-old male child seen in consultation because of "tumor" of the right elbow. Patient had been ill in the hospital with intermittent fever ranging from 101° to 103° F., headache, malaise, for three weeks. Examination revealed a large epitrochlear lymphnode of approximately the size of a golf ball, slightly tender, and movable. No other significant lymphadenopathy. Hgb. and RBC normal. Sed. rate 26 mm./hr. WBC—7,900 with 48% polys, 50% lymphs and 2% Eosin. Heterophil negative. Bone marrow normal. X-ray of long bones, chest, and right elbow—negative. Mantoux test negative. Urinalysis — negative. Serological tests for syphilis—negative.

Questioning of parents revealed that the boy fre-

quently was scratched by the three barn cats, and had had one slowly healing scratch of the right hand approximately one month before hospitalization. Skin test antigen was obtained and a positive test of 1.8 cm. area of erythema, and induration was obtained 48 hours after injection of 0.1 c.c. antigen intradermally. Following conclusion of this case the patient's mother brought a niece to the office who had spent the summer with her, and who was believed to have an inguinal hernia. However, the mother had become suspicious of the mass in this little girl after her experience with her boy and this child gave us the opportunity to study our second case.

Case #2. V. B. Four-year-old, white, female with mass in right inguinal region of one month's duration. Afebrile except for possibly first 3-4 days of swelling, vomited intermittently first few days, complained of headache and had blotchy macular rash over body for two days at onset of illness. She was seen by family doctor who diagnosed hernia and intestinal flu and prescribed for such. Operation for hernia was recommended for a later date. Mass in inguinal region remained the same, became tender and did not disappear at any time. Her aunt wondered whether this also might be "cat scratch disease."

Physical examination completely negative except for 6-7 cm. tender lymphnode in right inguinal region. Two small satellite nodes approximately 1/2 to 1 cm. on each side of this large node.

All laboratory tests including Sed. Rate, WBC, Hinton, urinalysis and intradermal tuberculin tests were normal. Skin test with 0.1 c.c. antigen intradermally produced induration and erythema 1.2 cm. in diameter within 48 hours.

Patient was reassured and seen at two weekly intervals, no specific treatment. At the end of 10 weeks inguinal lymphadenopathy had completely disappeared.

Case #3. T. McK. Nine-year-old, white, male with large 4 cm. node in right posterior auricular region which had been present for one week. Inspection revealed the presence of an ulcerated papule on right occipital area of scalp. Patient recalled that he had been scratched in this area by the family cat. Scratch had been cleansed and methiolate applied—exactly 12 days before lymphadenopathy was noted. The patient was skin tested and an area of induration and erythema 2 cm. in diameter was produced within 48 hours after intradermal injection of 0.1 c.c. of Cat Scratch Antigen.

Three days after the diagnosis was established the patient had a severe chill and temperature rise to 104° F. Node became fluctuant and drained sterile seropurulent pus for 5 days. During this period the patient was kept on therapeutic doses of chloromycetin with no clinical improvement. Following cessa-

tion of drainage the fistula healed well, temperature slowly returned to normal, and node returned to normal size in one month.

Case #4. R. T. Small three-year-old white farm boy seen because of swelling in left axilla of 10 days' duration. Examination revealed a large 5 cm. tender slightly erythematous left axillary lymphnode with many small satellite nodes. Many cat scratches on both arms, legs, and face. No local lesion other than scratches could be found. Remainder of physical examination normal.

Laboratory tests revealed the following: Hgb. 11 cm., RBC 4,100,000, WBC 12,300, 70% polys, 65% lymphs, 3% eosin., 2 Mono., Sed. Rate 18 mm./hr. Intracutaneous tbc. test negative.

Skin test positive for Cat Scratch Disease—1 cm. wheal and induration in 48 hours.*

Control test on mother was completely negative. The patient remained afebrile although he constantly complained of pain in left axilla upon movement of left arm. After approximately 2 weeks, the left axillary node began regressing in size, became non-tender, and one month later a residual small 1 cm. node was all that could be palpated in this area.

SUMMARY AND CONCLUSIONS

- 1. Four cases of benign inoculation, lymphoreticulosis with positive skin tests are reported.
- 2. The disease is undoubtedly present in all areas where cats are kept as pets and is frequently confused with more serious illnesses.
- 3. A positive diagnostic skin test in the presence of compatible clinical findings establishes the diagnosis.
- 4. In those with known exposure present diagnostic methods should be employed before resorting to biopsy and removal of involved lymphnodes.

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THE INHIBITION OF LACTATION WITH TACE

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It is probable that at least 75% of all post-partum patients today do not nurse their babies. Whether right or wrong, this is the situation as it exists and as it must be dealt with. What to do about these post-partum non-nursing breasts is a very real problem. The mother with large, hard, painful, and leaky breasts is extremely uncomfortable. It may be very disconcerting for the obstetrician to see his patient complaining bitterly about something for which he can offer little except sympathy.

If nature is allowed to take its course, the breasts usually become fairly engorged within 3 to 4 days post-partum, and the discomfort lasts for two to three days. As in all matters subjective, the degree of complaint varies tremendously. Symptoms may be helped by breast binders, analgesics, etc.; but relief is often quite undramatic.

A number of regimes have been evolved for the inhibition of lactation to prevent this discomfort. Most of these have been based on the use of estrogens in the immediate post-partum period.¹ The most commonly used substance has been stilbestrol. Varying degrees of success have been reported many times in the literature. There have been three chief drawbacks to these regimes:^{2, 3, 4}

1) Often initial success is poor, and painful engorgement occurs despite therapy.

2) After the patient has left the hospital secondary engorgement may occur.

3) Withdrawal bleeding may occur after cessation of the drug—this has been fairly frequent, especially with the use of stilbestrol, and is often of serious nature.

For these reasons (particularly the last two) many clinicians, after extensive experience, have abandoned the use of hormones for the suppression of lactation. They feel that some degree of initial discomfort without sequelae is preferable to the risks of secondary engorgement or bleeding attendant upon hormone therapy.

From time to time glowing or fairly glowing reports of new substances or methods have appeared in the literature. Unfortunately, however, we have found that it is difficult in our practices to duplicate the beautiful results reported in the journals and the drug-house brochures. Perhaps the power of suggestion makes impartial reporting difficult. One must be especially wary in comparing statistically the results of worker A, using compound X, with those of worker B, using compound Y.

In May of 1953 the use of a new estrogenic substance, Chlorotrianesene (TACE)* for inhibition of

*TACE is the trade-mark of The Wm. S. Merrell Company, Cincinnati, Ohio, for its brand of chlorotrianisene (tri-*p*-anisylchloroethylene).

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lactation was reported.⁵ This compound is thought to be partially stored in the body fat during administration,^{6, 7} being gradually released into the body after the termination of dosage.⁶ In this way there is a tapering-off effect, and the possibility of withdrawal phenomena are felt to be greatly decreased.⁸ Initial reports on the use of TACE have been impressive.

In the present study, TACE was administered in a dosage of two capsules (48 mg.) twice daily for seven days to a consecutive series of 201 private and ward patients who did not nurse their babies. Therapy was instituted as soon as possible after delivery, usually within 24 hours. Comparative studies involving other estrogens are in progress and will be reported later.

In evaluating the results of therapy the following points were of special interest:

- 1. Initial prevention of discomfort.
- 2. Incidence of secondary filling.
- 3. Incidence of withdrawal bleeding.
- 4. Effect on post-partum menstrual periods.
- 5. Side effects.
- 6. Convenience and expense.
- 7. Comparison of clinical results achieved with TACE to those obtained in control patients.

INITIAL PREVENTION OF DISCOMFORT

It is difficult to grade breast engorgement and discomfort quantitatively. The following classifications of subjective discomfort and engorgement was used in this study:

Excellent (Grade 4): No complaints of breast tenderness, and no or minimal objective evidence of engorgement.

Good (Grade 3): Minor complaints and/or mild firmness of breasts.

Fair (Grade 2): Moderate complaints or firmness of the breasts.

Poor (Grade 1): Serious complaints, marked tenderness and swelling of the breasts. Findings similar to those receiving no medication.

Based on this classification the results, scored by two independent observers, were:

151 Private Patients Observers A		50 Ward Patients Observers B		Total
Grade 4	39	43		82 (40.8 per cent)
Grade 3	73	6		79 (39.3 per cent)
Grade 2	36	0		36 (17.9 per cent)
Grade 1	3	1		4 (2.0 per cent)

When the excellent, good, and fair results are grouped together, 197 (98.0 per cent) of the patients were benefited by the use of TACE.

It was our impression that any engorgement which did occur with TACE began several hours later than it usually does when no medication is given.

It should be noted that even in the unsatisfactory cases, engorgement was not as severe or prolonged as it occasionally is in patients who receive no medication.

Two incidental factors which we were interested in assessing were the value of 1) restriction of fluids and 2) prophylactic tight breast binders in preventing engorgement. With regard to restriction of fluids, no significant effect could be determined one way or the other. However, it is our clinical impression that slight restriction of fluids for the first three post-partum days may be beneficial and can do no harm. With regard to prophylactic breast binders, no benefit could be determined and we do not now employ these.

INCIDENCE OF SECONDARY FILLING

Since less than 50 per cent of the ward patients are seen after they leave the hospital, our follow-up data refer only to the 151 private patients. In the entire group not a single instance of secondary engorgement was noted. One patient, after returning home, noted a slight secretion which stopped spontaneously in a few days. The same patient had had a marked secondary filling following a previous pregnancy. Several patients had a continuation of slight secretion for two to four days after their discharge from the hospital. In no instance was it necessary to prescribe another course of TACE or any other medication. These results are in marked contrast with those obtained with stilbestrol, the use of which is followed by a relatively high incidence of secondary engorgement or filling.

A number of our patients had experienced secondary filling after stilbestrol therapy in previous pregnancies, and they were greatly impressed by the lack of this with TACE. Although our ward patients could not be included statistically, none of them complained of secondary engorgement.

WITHDRAWAL BLEEDING

Withdrawal bleeding occurred in only one patient and this was mild. Routine examination after a normal delivery indicated that the placenta had been delivered intact. The immediate post-partum course was uneventful, but two weeks after delivery the patient passed a small clot and began to bleed slightly but persistently. The administration of small decreasing doses of stilbestrol over a period of three weeks controlled the bleeding.

Although our ward patients could not be included statistically, none of them complained of withdrawal bleeding.

EFFECT ON POST-PARTUM MENSTRUAL PERIODS

Data on 110 private patients indicated that the return of the first post-partum menstrual period may be delayed slightly. Whereas in untreated patients

the first period usually occurs within four to six weeks after delivery, 80 per cent of the TACE treated patients did not have a return of the menses in less than six to eight weeks. Apart from the slight delay, there was no alteration of the menstrual pattern.

SIDE-EFFECTS OF MEDICATION

No side-effects of any type were noted in our patients which could have been ascribed to TACE.

CONVENIENCE AND EXPENSE

The capsules of TACE are rather large, but only one patient was unable to take them; this patient was unable even to swallow aspirin tablets. The dosage schedule (two tablets twice a day for seven days) is a little long, but this is hardly an important drawback. Most of our private patients were discharged with the remainder of their capsules in an envelope which they took with them. There were no complaints on this score.

COMPARISON WITH CONTROLS

Since all obstetricians are so familiar with the results obtained when no hormones are given, we have not run a large statistical series of this group. We did, however, follow a group of ten ward patients with no drugs. A comparison between these ten patients and the fifty ward patients on TACE, as evaluated by the same observers, is instructive. The fifty patients on TACE were in the hospital for a total of 302 post-partum days; the ten patients on no drugs were in for a total of 53 days. Expressed in tabular form, the frequency of different degrees of engorgement in these two groups is as follows:

	None	Slight	Moderate	Severe
No drugs (total 53 d.)	25 d. 47.2%	12 d. 22.6%	10 d. 18.9%	6 d. 11.3%
TACE (total 302 d.)	284 d. 94.0%	15 d. 5.0%	2 d. 0.7%	1 d. 0.3%

We feel that these figures conclusively demonstrate the tremendous improvement offered by TACE over Mother Nature.

COMPARISON WITH OTHER PRODUCTS

We feel that this is a most important part of our study. We have been unable to find in the literature a study in which the best currently available products have been compared by one set of observers. We feel that valid comparisons cannot be made when separate groups of observers independently report on individual drugs. An example of this will be noted in the difference in the results reported on our two sets of TACE patients.

There are many papers in the literature, and an extended review of them would be repetitious. Several recent papers may be cited as a baseline.

Katzman⁹ stated that estrogens have been reported to suppress lactation in 66-98.5 per cent of cases and testosterone in 60-100 per cent. Using a single 2 c.c. injection of Gynetone (estradiol benzoate 2 mg. and testosterone propionate 40 mg.) within 24 hours of delivery he reported satisfactory inhibition of lactation without side effects in 97 per cent of his cases. Of the 33 patients treated, results were excellent in 9, good in 19, fair in 4 and poor in 1. Those patients who did not do well were benefited by an additional injection of 1 c.c. of Gynetone within 48 to 72 hours.

Rienzo¹⁰ reported on the use of Estan, an oral tablet which contains 5 mg. of methyltestosterone and 0.25 mg. of dienestrol. A series of 92 patients received 2 tablets of Estan t.i.d. for 5 days. Results were excellent to good in 81.6 per cent of the patients treated. A comparison group received 50 mg. of testosterone propionate intramuscularly daily for 3 days. All 36 patients thus treated suffered painful engorgement but lactation did not occur in any case. The nursing personnel in his department preferred Estan to any product with which they were familiar.

In a review of published literature, Morton and Miller¹¹ reported that stilbestrol and other estrogens were effective in 38.5 per cent to 90 per cent of the patients to whom it was administered. They themselves tried several dosage schedules of which the most successful was as follows: 5-10 mg. initially, 5 mg. daily for 7-10 days, 4 mg. daily for 4 days, 3 mg. daily for 3 days, 2 mg. daily for 2 days, and 1 mg. daily for 11 more days. Of 60 patients on this regime, 3 patients had initial failure and 1 patient a later failure, giving 93.4 per cent good results. Fourteen of the 60 patients had slight post-partum bleeding not definitely attributed to stilbestrol.

Nulsen, Carmon and Hendricks⁵ report on the use of TACE in 100 patients. They gave one capsule of TACE four times daily for seven days. They noted a symptom-free suppression of lactation in 97 patients; 3 patients had secondary filling and required a second course of TACE. There was 1 case of post-partum bleeding which was extremely scant. They state that TACE may be given even after a preliminary period of breast feeding, with equally satisfactory results. They quote a collected series of 1591 cases of stilbestrol therapy in which profuse bleeding occurred in 6 to 7 per cent.

COMPARATIVE STUDIES

Our comparative studies are still in progress, but a preliminary report may be made, at this time. Our plan is to run units of fifty patients on each product being tested; these studies are being made with ward patients at the Maine General Hospital and all results are being assessed by the same group of observers.

The first group of patients received TACE and the results with this group have been noted.

The next group received Gynetone. In an effort to obtain optimal results each patient received an injection of 2 c.c. within the first 24 hours and 1 c.c. in the next 24 hours. After 20 successive patients had been followed, it was felt that results were definitely not good, and that the patients were doing only slightly better than if they had received no medication.

The next group consisted of forty patients who received stilbestrol. Several dosage schedules have been used in the hospital in the past, on both private and ward patients; they have usually consisted of varying amounts of stilbestrol for three to five days, and results have been only fair. After surveying the literature we decided that the dosage schedule used by Morton and Miller (cited above) had given the best results with the fewest adverse results.

However, their dosage schedule involves an amount of planning and calculation which we feel might be confusing to many patients. We therefore evolved a somewhat similar plan which we felt would retain the essential features of their schedule while being easier for patients to follow: 5 mg. bid for 2 days and 5 mg. daily for 4-5 days, both of these taking place in the hospital; 1 mg. bid for 1 week and 1 mg. daily for 2 weeks, these being taken while the patient is at home.

Forty patients on this regime have been followed. The initial results were very good—approximately as good as, or perhaps slightly better than those with TACE. Follow-up studies on these patients are not complete, because the ward patients have proved quite difficult to trace. Our present feeling, however, is that withdrawal bleeding and secondary filling are occurring somewhat more often than with TACE.

Another group of 50 patients has been treated with Estan. These patients received Estan, 2 tablets t.i.d. for 5 days followed by 1 tablet t.i.d. for 5 more days. This addition in dosage over that followed by Rienzo and cited above was used at the suggestion of the representatives of the White Company which make the product; they state that the schedule we used is currently the one they are recommending.

Initial results with Estan are definitely less satisfactory than with TACE, as several of these patients had severe initial engorgement despite the medication. Our follow-up studies on these patients are not yet complete.

Nurses on the obstetrical wards in the three hospitals where this study was conducted expressed the opinion that TACE seemed superior in initial results to any other type of treatment with which they had been previously familiar. (This did not include the use of Gynetone, Estan or stilbestrol in the dosage schedule we employed in this study.)

Twenty-three of our multiparous patients preferred TACE to the medication they had received following previous pregnancies. Four did not notice any difference. No patient preferred another medi-

cation to TACE. Several were surprised and delighted by the absence of adverse after-effects.

CONCLUSION AND SUMMARY

A new type of estrogen, TACE, has been used for inhibiting lactation in 201 post-partum patients. Satisfactory initial results were achieved in 197 patients (98.0 per cent). There was no secondary engorgement or filling in the 151 private patients and only 1 case of withdrawal bleeding in the same group. Complete data were not obtained on the ward patients, but insofar as is known equally good results were obtained. TACE may cause a slight delay in the onset of the first post-partum period but does not affect the duration or amount of the flow.

From the results of comparative studies still in progress employing other hormones, it may be tentatively concluded that no product with which we are familiar equals TACE in effectiveness and safety.

It is our present opinion that the use of TACE to suppress post-partum lactation is the treatment of choice in non-nursing mothers.

NOTE: We should like to acknowledge our gratitude to the William S. Merrell Company of Cincinnati, Ohio, manufacturers of TACE and especially Mr. Joseph Crozier and Mr. D. M. Bowles for their coöperation and generosity in furnishing the TACE used in this study; to the White Company for supplying us with Estan; to the Schering Corporation for supplying us with Gynetone; and to the nursing personnel of the Obstetrical wards of the Maine General Hospital, Mercy Hospital, and the Maine Eye and Ear Infirmary for their courtesy and helpfulness, especially Miss Dorothy Brown and Miss Mary Small of Ward E at the Maine General Hospital.

ADDENDUM

Since the conclusion of the above study, approximately fifty more private patients have completed a similar course of TACE; results in these patients have been equally as good as those described above.

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THE PRESIDENT'S PAGE

Abuse of Blue Cross and Blue Shield

There are many problems in the administration of Blue Cross and Blue Shield. If the rates are too high the distribution is restricted and the inexorable law of diminishing returns operates. If too low there will be a deficit. Even with the optimum maximum return to the Blue Cross the amount paid to hospitals is below what they should properly receive for care. Thus there is a three-horned dilemma. Obviously the situation worsens if there is an unjustifiable use of the privileges. Here the integrity of the referring physician bears a large part. However, he often finds himself on the spot. Strictly, we should say, Blue Cross should not be used for anything that could be as well treated at home, and the hospital stay should not be prolonged beyond the needful period. Practically, it is not so simple and there are many considerations that put quite a strain on even an inelastic conscience. Distance may be a factor. The patient who lives at a distance from his physician is at a disadvantage both from the point of view of receiving adequate care and financially. Thus there is a discrimination either against the patient or the physician if this distance factor is not taken into consideration. Another situation where there is a comparable differential is where the patient might get along as well at home if he had ordinary waiting on, whereas he would be seriously neglected should he live alone.

One would think that no one would want to stay in a hospital longer than necessary but it is surprising how many want to drag out their stay. It seems to be a human trait to want to get a return on that for which they have paid good money. Some say "Doctor, I want to go in for a good check-up and a long rest. I have Blue Shield." This sort of insistence is hard to combat and there are not too many physicians who have the hardihood to resist it without some compromise. I regret to say that there are some who apparently abet it.

It might be well if Hospital Staffs were to review cases admitted under Blue Cross either in toto or by a process of sampling to determine if either necessity for admission or length of stay was reasonable.

Summarizing: We should use extreme care and diplomacy in avoiding misuse of a valuable privilege. Remember the Golden Egg. Bear in mind that the objectives are a large group of subscribers at fair rates and a satisfactory return to the burdened hospitals all of which are direct corollaries of a fair selection of cases for hospitalization.

ROBERT W. BELKNAP, M. D.,*
President, Maine Medical Association.

The opinions expressed on this page are naturally the personal ones of the President. They are on subjects which he feels should engage the thought of the Association. He does not presume to assert they are the final word and in fact they are offered as a means of stimulating discussion. Comments favorable or unfavorable are invited in the Letters to the Editor column.

* Deceased August 11, 1954.

The Journal of the Maine Medical Association

THOMAS A. FOSTER, M. D., Portland, Editor

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Joint Commission

We learned recently that doctors were in Maine visiting the hospitals for the good purpose of reporting on their standards. We made an appointment to meet one of them, Dr. Gaylord R. Hess, at North Conway as he was traveling from Maine into New Hampshire. Dr. Hess, resident of the Chicago area and thoroughly familiar, from close association, with the objects of standardization principles expressed with uninhibited friendliness a willingness to elaborate on the mechanics of the "New Commission."

In the restful atmosphere of his room at the Eastern Slope Inn, he proceeded to review the history of this movement to help hospitals establish acceptable standards and therefore offer "better care to sick people." About 1915, he said, the American College of Surgeons under the direction of Director General Franklin Martin, undertook to visit hospitals, not only in this country but also in Canada, with cordial Canadian coöperation, and to suggest methods for more effective hospital service. This program, as the members of the medical profession know, became an important influence in hospital progress and in hospital professional staff organization and regulation. For many years the College of Surgeons supported the program and during these many years the hospitals of the Country strove to be counted among the approved.

Notwithstanding the report that surgeons have bags heavy with money and therefore the College of Surgeons was well endowed the appropriation for the extensive survey strained their budget and the plan came up for careful review. Facts and figures convinced the surgeons and the College that ways should be considered for carrying on the plan under some coöperative association. Therefore, the "New Commission"—was evolved, called "Joint Commission on Accreditation of Hospitals." And the joint commis-

sion has representatives from five participating organizations, namely—American College of Surgeons, American College of Physicians, The A. M. A., The American Hospital Association and the Canadian Medical Association. Each organization selects from its membership a group to serve on the Commission.

The Commission organized on this basis becomes the administrative body. It engineers the surveys. It selects upon recommendation from the supporting groups, the doctors who carry on over the Country. It reviews all the reports from its members doing the field work, adjusts the reports, screens them carefully and writes the final decisions which are forwarded to the hospitals under consideration.

Evaluation for approval is not, however, quite as simple as the above paragraph may indicate. In order to rate hospitals which vary in size and complexity the commission divides them into three categories: 1) Hospitals with active surgical services, with active tumor clinics well organized, with cancer cases on the wards and with staff interns and residents. 2) Hospitals without tumor clinics, with less active surgical services but with interns and sometimes residents. 3) Hospitals with a small number of beds of a general nature but without interns or residents. The participating organizations allot the responsibility of examining hospitals in the different categories to the members of the staff especially appointed for the mission by the organization most vitally interested in the type of hospital. By this procedure it is felt that an equitable estimation reaches headquarters from the examining doctor. We gathered from our interview with Dr. Hess that the relationship between the commission and the hospitals was a healthy and friendly one.

We felt that the information about the Commission and its objects would be of interest to our mem-

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NECROLOGY



Robert W. Belknap, M. D.
1890 - 1954

On August 11, 1954, the medical profession lost a valued and honored colleague in the sudden death while at his office of Robert W. Belknap, the President of the Maine Medical Association. Dr. Belknap, a native and lifelong resident of Damariscotta was a medical stalwart in our midst. He spent his life in his home town, attended Lincoln Academy, graduated from Bowdoin College and received a degree in medicine from Harvard Medical School. He was a genuine New Englander, endowed with the solid, dependable and capable qualities characteristic of the best of these good people.

Dr. Belknap was born September 1, 1890, the son of Samuel C. and Susie Hall Belknap. He married Martha Chapman, a Maine girl, and they brought up a lively family of six children. The demands of an extensive practice in medicine and surgery together with the responsibilities of the family did not prevent Dr. Belknap from contributing generously of his time and sound judgment to his County and State Medical Associations. He accepted appointments on numerous committees, filled the Chair of President of Lincoln-Sagadahoc County Society, served as Councilor for the Third District and at the annual meeting of the State Association in Portland, our one hundredth meeting, was elected to the Office of President-Elect. He entered into the duties of the President with enthusiasm and many challenging plans. He prepared for the JOURNAL a series of statements which he hoped would stimulate discussion and positive action.

He served with devotion and skill on the Staff of the Miles Memorial Hospital and for many years was Chief of Staff.

Dr. Belknap was a member of St. Andrew's Episcopal Church. And he gave his support to the Alna Lodge of Masons and the Wells-Hussey Post, American Legion. He was a member of the International College of Surgeons and the American Medical Association.



EUGENE E. O'DONNELL, M. D.

Councilors Elected at 101st Annual Session

The following Councilors were elected at the Second Meeting of the House of Delegates at the 101st Annual Session of the Maine Medical Association, June 14, 1954.

First District, Eugene E. O'Donnell, M. D., Portland.

Second District, Alcid F. DuMais, M. D., Lewiston.

Fourth District, Richard P. Laney, M. D., Skowhegan (to fill unexpired term of Dr. Maurice E. Lord who resigned).

1954 Golf Tournament

Following is a list of prize winners and donors of the awards at the 1954 Golf Tournament of the Maine Medical Association.

Doctors—Gross Prizes

Dr. John F. Reynolds—Steak Knives (8), Geo. C. Frye Co., and Maine Medical Association.

Dr. Francis A. Winchenbach—Electric Clock, The P. J. Noyes Co.

Dr. Martyn A. Vickers—Trophy, Surgeons' & Physicians' Supply Co., and Sterilizer, Eli Lilly & Co.

Dr. Raymond A. Tougas—6 Golf Balls, M & R Laboratories (Similac).

Dr. Thomas F. Fay—Golf Balls, Mead Johnson & Company.

Dr. Paul W. Burke—Cigarette Lighter, Parke, Davis & Company.

Dr. Robert L. Allen—Queen Anne Table Lighter, Picker X-ray Corp.

Dr. M. A. Torrey—Cigarette Lighter, Ciba Pharmaceutical Products, Inc.

Dr. George J. Robertson—Medical Book, F. A. Davis & Company.

Dr. Kenneth W. Sewall—Golf Balls, M & R Laboratories (Similac).

Dr. Valentine J. Moore—Golf Balls, DoHo Chemical Corporation.

Doctors—Net Prizes

Dr. Francis Mack—Trophy, Maine Medical Association.

Dr. Charles W. Kinghorn—Cigarette Lighter, Ciba Pharmaceutical Products, Inc.

Dr. Carl E. Richards—Bath Scales, E. F. Mahadey Co.

Dr. Ralph Metcalf—Interval Timer, General Electric X-ray Co.

Dr. Stephen A. Cobb—Medical Book, W. B. Saunders Company.

Dr. Kenneth J. Cuneo—Desk Set, U. S. Vitamin Corporation.

Dr. Robert O. Kellogg—Medical Book, F. A. Davis & Company.

Dr. Ralph Heifetz—Sand Wedge, Lederle Laboratories.

Dr. Ralph C. Stuart—Drugs, Breon Co.

Dr. Allan J. Stinchfield—Golf Balls, Chas. Pfizer & Co., Inc.

Ladies

Mrs. Nancy Allen—Trophy, Surgeons' & Physicians' Supply Co.

Mrs. Pauline Ansell—Trophy, Maine Medical Association.

Miss Louise Trainor—Golf Balls, Mead Johnson & Company.

Mrs. Helen Kinder—Golf Balls, Chas. Pfizer & Co., Inc.

Mrs. Bernice Heifetz—Cigarette Chest, Philip Morris & Co., Inc.

Mrs. Kenneth Sewall—Golf Balls, Chas. Pfizer & Co., Inc.

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STANDING COMMITTEES — 1954-1955

The Nominating Committee presented the following report consisting of nominees for Standing Committees for 1954-1955, and for a Delegate to the American Medical Association to serve from January 1, 1955, to January 1, 1957, at the Second Meeting of the House of Delegates of the Maine Medical Association at Rockland, Maine, June 14, 1954. And, on motion duly made and seconded, it was voted to accept the report of the committee.

NOMINATING COMMITTEE

- First District*, DANIEL F. HANLEY, M. D., Brunswick.
- Second District*, RALPH A. GOODWIN, SR., M. D., Auburn.
- Third District*, ROBERT L. ALLEN, M. D., Rockland.
- Fourth District*, LORING W. PRATT, M. D., Waterville, *Chairman*.
- Fifth District*, JOHN T. METCALF, M. D., Calais.
- Sixth District*, CLEMENT L. DONAHUE, M. D., Caribou.

Scientific Committee

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- Francis H. Sleeper, M. D., State Hospital, Augusta (2 yrs.)
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Committee on Medical Education and Hospitals

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- George J. Robertson, M. D., 33 College Ave., Waterville (3 yrs.)
- C. Harold Jameson, M. D., 463 Main St., Rockland (3 yrs.)

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- Oscar F. Larson, M. D., Machias
- Gerald H. Donahue, M. D., 5 Station St., Presque Isle
- The Secretary, ex-officio

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Delegate to the American Medical Association

- (January 1, 1955, to January 1, 1957)
- Martyn A. Vickers, M. D., 268 State St., Bangor

SPECIAL COMMITTEES 1954 - 1955

The following Special Committees for 1954-1955 have been appointed by the President,
Robert W. Belknap, M. D., of Damariscotta.

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Continued on page 236

FALL CLINICAL SESSION

Preliminary Program

Portland, Maine, September 24 and 25, 1954

The 1954 Fall Clinical Session of the Maine Medical Association will be held at Portland, Maine, Friday and Saturday, September 24 and 25, with headquarters at the Eastland Hotel.

SPEAKERS SPONSORED BY MAINE CANCER SOCIETY

Included on the program will be the following speakers sponsored by the Maine Cancer Society:

Sidney Farber, M. D., Children's Hospital, Boston

Joseph V. Meigs, M. D., Clinical Professor of Gynecology, Harvard Medical School

Thomas J. Anglem, M. D., Assistant Professor of Surgery, Boston University School of Medicine

Gordon P. McNeer, M. D., Memorial Hospital, New York City

Cushman D. Haagensen, M. D., Associate Professor of Clinical Surgery, Columbia University College of Physicians and Surgeons

Richard H. Overholt, M. D., Professor of Clinical Surgery, Tufts College Medical School

DINNER MEETINGS

The session will open with a dinner meeting Friday evening, September 24, at 6.30 P. M. and close with a dinner meeting on Saturday evening, September 25. Speakers for these meetings, which are open to physicians and wives, will be announced in the Official Program.

ROUND TABLE CONFERENCES

A special feature of this session will be a series of Round Table Conferences during the luncheon on Saturday, September 25. Each member of the Association will soon receive a letter relative to the session which will contain a list of Round Table Conferences and Speakers — and a card (to be returned to the Association's office) on which the preferred conference can be designated.

SCIENTIFIC SESSIONS

Saturday forenoon and afternoon, September 25, will be devoted to scientific papers on timely subjects, presented by the above listed speakers and other speakers of equal caliber, including Edward R. Benedict, M. D., of Boston.

The Maine Trudeau Society will sponsor a speaker for the Saturday afternoon session. And, there will be a meeting of the Maine Trauma Committee of the American College of Surgeons on Saturday, with speakers to be announced.

OFFICIAL PROGRAM

The Official Program, which will contain all details regarding the session, will be published in the September issue of the JOURNAL and a copy sent to each member.

RESERVATIONS

Room reservations should be made direct with the Manager of the Eastland Hotel, 157 High Street, Portland 3, Maine. Room rates: Single room with bath \$5.25 and \$5.75 per day. Double room with twin beds and bath \$9.25 per day.

Tickets for the dinner meetings, Friday and Saturday, and for luncheon Saturday noon, will be on sale at the Association's Registration Desk.

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WOMAN'S AUXILIARY TO THE MAINE MEDICAL ASSOCIATION

There will be a meeting of the Woman's Auxiliary during the Clinical Session—program to be announced.

WOMAN'S AUXILIARY MAINE MEDICAL ASSOCIATION Officers and Committee Chairmen 1954 - 1955

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Special Committees—Continued from page 234

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Charles F. Branch, M. D., 69 Gamage Ave., Auburn
Dean Fisher, M. D., State House, Augusta
Frederick T. Hill, M. D., 177 Main St., Waterville

M. M. A. Representative on the Maine Committee of the American Academy of Pediatric's Committee on Fetus and Newborn

Henry C. Thacher, M. D., 34 Court St., Auburn

President's Address—Continued from page 213

our state that typhoid has been so prevalent. One of the lessons to be learned is the potentiality of the typhoid bacillus to infect large bodies of water and the necessity of filtering the water for city purposes. He also mentioned tuberculosis as a preventable disease and states that Maine should be the banner state

in freedom from The White Scourge.

Thus, wrote our President 51 years ago; a general practitioner of wide experience who valued his relations with his State Medical Association and accepted the responsibilities which the practice of medicine entailed.

Joint Commission—Continued from page 230

bers. And after thanking Dr. Hess just before saying good-bye we asked him if he had any special comments to pass on to our members. He smiled, thought a minute, then said, "Doctor, the hospitals which I

have seen in Maine are good; two things could be improved. One, professional staff organization and two, medical records."

Legislature 1955

Perhaps some understanding of the Legislature, its make up and how it functions will help toward a better understanding of what can and what cannot be done during a session.

Normally the Legislature meets in regular session once every two years. This happens regularly in the odd-numbered years and so there will be a regular legislative session in 1955. The Legislature will be made up of men and women, a great many of whom never had previous legislative experience. Some of the Representatives in the House will have been there before, a few for several terms; many of the Senators will be people who have served previously in the House as Representatives and a few more will have previous experience in the Senate. Some Senators will be without any Legislative experience.

There will be a special session of the Legislature probably around September of this year, but this will be for the special purpose of adopting a revision of the statutes which has been prepared. There may be other extraneous legislation of an emergency character introduced or attempted but it will probably be pretty much limited to the revision of the statutes, which is not creating new laws, but is a confirmation of the codifying of laws already passed and approved.

And this special session will not be of the Legislature to be elected for 1955, it will be of those who were elected for 1953. So that when the new Legislature convenes on the 1st Wednesday in January, 1955, it will be a new one, will have to elect its own officers, appoint its committees and adopt its rules of procedure, in other words, organize.

It will convene on the first Wednesday in January, 1955, and will adjourn when it gets through with its business which will be around the first of May that year. It will have 151 House members and 33 Senators acting as separate bodies, each independent of the other.

In the approximately four calendar months of the session, they will receive from 1500 to 2000 proposals for legislation. There will be a cloture rule introduced and passed early in the session which will say that no legislation will be received after a certain date, perhaps about the 8th of February, except by unanimous consent of both House and Senate. Some experienced members will evade this rule by filing with the Revisor of Statutes the title and nature of

the bill and it will be received when its sponsor gets around to put it in shape.

All this legislation is referred to Joint Standing Committees for public hearings. It may be reported by the Committee unfavorably, or favorably, or it may be amended in the committee so that its sponsor can hardly recognize it. It may be amended in the House or Senate after being reported out of committee and acted upon in amended form without further public hearing. In all cases of amendments, the final enactment must be germane to the original bill.

During the Session the Association usually furnishes me with the Document Service. This cost in 1953, \$20.00 and brought by mail to this office every piece of proposed legislation received by the legislature. However, in the last few weeks of the session, amendments made on the floor of the House or the Senate will be "reproduced and distributed" (mimeographed) and action will be too fast ordinarily for information or answer by mail; it is necessary to be right there if you are to do anything.

The legislators are overwhelmingly an honest, well-intentioned group. They do have their own bias and prejudices, even as you and I, and these do sway their judgements. They will listen patiently to arguments and give just as honest and wise decisions as their training and experience dictate.

In the haste and hurly-burly of these 16 or 17 sessions people interested in legislation do not have unlimited time to study and ponder; they must make decisions and act on them. This applies as much or more to those outside the legislature as to those in it.

Because of the expressed wishes at the last House of Delegates meeting, this office will make every effort within its physical and financial limitations to keep members of the Maine Medical Association informed on pending legislation. It does not seem feasible to furnish copies of proposed legislation of medical interest to every member of the Maine Medical Association but it would be possible to furnish such copies to one or two members of each County Society if they were designated and known to this office. The JOURNAL is not adapted to this work; this is being written July 19th and will reach you about the middle of August. A bill could be passed or killed in that time.

W. MAYO PAYSON,
Executive Secretary.

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NEWS AND NOTES

Eisenhower Health Program Slated for Discussion at New England Health Institute

"The Eisenhower Health Program" will be the subject of the opening session of the New England Health Institute in Burlington, Vermont, on August 25, with Harlan L. P. Wendell, Special Assistant to the Secretary, U. S. Department of Health, Education, and Welfare, as guest speaker.

The Institute has been scheduled for August 25, 26, 27. Panel discussions of special interest to physicians have been planned, among them "Total Care in Chronic Illness," "Cancer Control," and "Communicable Disease."

Complete programs will be distributed soon by the Office of Health Education, Maine Department of Health and Welfare. Registration fee has been set at \$1.50, to be paid at the time of registration. The University of Vermont will provide rooms at the rate of \$2 per person per night. Accommodations for both single persons and families will be available.

Pediatric Institute for the General Practitioner Friday, September 10, 1954 Maine General Hospital, Portland, Maine Under the sponsorship of The Division of Maternal and Child Health, Maine Department of Health and Welfare Endorsed by the Maine Medical Association

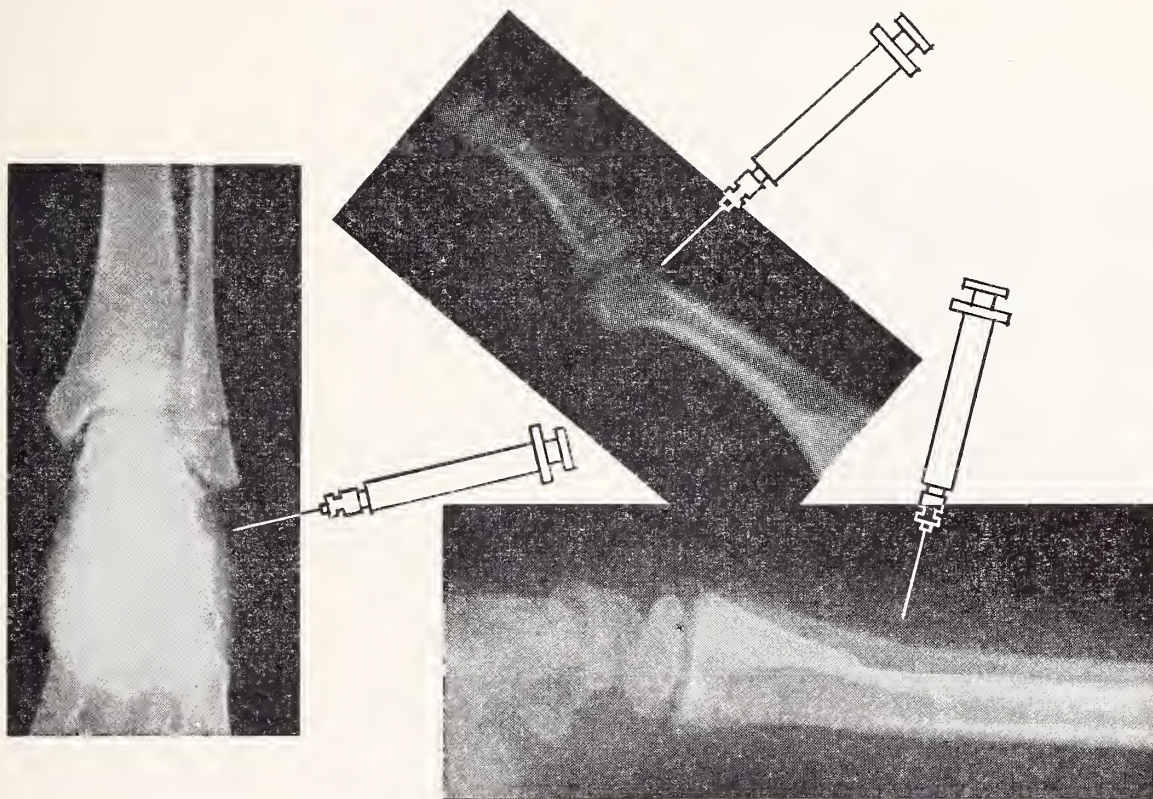
PROGRAM

- 10:00 A. M. Welcome
Alice A. S. Whittier, M. D., Chief of Pediatric Service, Maine General Hospital, Portland
- 10:15 A. M. Eye Problems in Infancy and Childhood
S. Forrest Martin, M. D., Director of Eye Clinic, The Children's Hospital, Boston
- 11:00 A. M. Hearing and Related Speech Disturbances in Children
Charles Ferguson, M. D., Associate Laryngologist, The Children's Hospital, Boston
- Noon Recess
- 2:00 P. M. Neurosurgical Conditions in Childhood
Donald D. Matson, M. D., Associate Neurosurgeon, The Children's Hospital, Boston
- 3:15 P. M. Ward Rounds
Alice A. S. Whittier, M. D., Chief of Pediatric Service, Maine General Hospital, Portland

Polio Vaccine Trial Needs Physicians' Aid As It Moves Into Evaluation Phase

More than 600,000 children have completed three inoculations, in the field test of the trial polio vaccine developed by Dr. Jonas E. Salk of the University of Pittsburgh. The emphasis now shifts to the evaluation study under the direction of Dr. Thomas Francis, Jr., University of Michigan School of Public Health. The validity of the evaluation is dependent upon data gathered on poliomyelitis cases in the test groups, *including those children in the first three grades who did not get vaccine.*

In addition, data on cases among family members of participating children are an integral part of the study. Since the number of poliomyelitis cases among the test groups may not be large, it is essential that all cases are completely reported. Early diagnosis, prompt reporting and follow-up, and the securing of *necessary epidemiological information and laboratory specimens* are important factors in the evaluation.



Use of Alidase® in Closed Wounds: Contusions, Sprains, Dislocations, Simple Fractures

In traumatic surgery¹ where "definitive treatment . . . is often delayed while the surgeon waits for nature to dispose of hematoma and oedema" Alidase is an efficient means^{1, 2} of accelerating dispersion of accumulated fluids.

Swenson² has described his highly successful results with Alidase in various types of closed wounds. He summarized them as follows:

To remove local fluid accumulations in contusions or bruises, "The usual dose, 500 viscosity units Alidase® mixed in a small amount of normal saline, is injected into the localized fluid. Mixing the hyaluronidase in 1 per cent procaine solution will also produce local vasodilatation, relief of local pain and more rapid absorption of the fluid mass. This method can also be applied to traumatized bursae or synovial spaces which do not respond to repeated aspirations."

The point of maximal pain is infiltrated with 10 cc. of a 1 per cent procaine solution to which 500 viscosity units of Alidase have been added. With this simple technic, a high percentage of successful results has been obtained.

Alidase may be used to advantage to produce more rapidly a short-acting, complete block anesthesia and to facilitate reduction in subluxation or complete dislocations of the interphalangeal joints. When anes-

thesia is required for fracture reduction, local block anesthesia can be simplified by adding Alidase to the anesthetic solution. Alidase also tends to decrease local edema and hematoma formation.

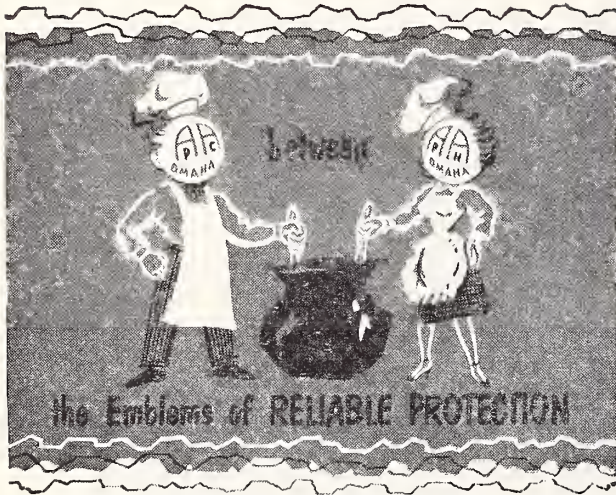
Fluids administered with Alidase are rapidly absorbed from subcutaneous tissue. The simplicity of hypodermoclysis avoids the cumbersome arm board, permits convenient administration with little or no pain or swelling, is vein-sparing and saves nursing time in such conditions as burns, postoperative states, toxemias and parenteral alimentation.

Alidase (brand of hyaluronidase) is supplied in serum-type ampuls of 500 viscosity units. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

1. MacAusland, W. R., Jr.; Gartland, J. J., and Hallock, H.: The Use of Hyaluronidase in Orthopaedic Surgery, *J. Bone & Joint Surg.* 35-A:604 (July) 1953.

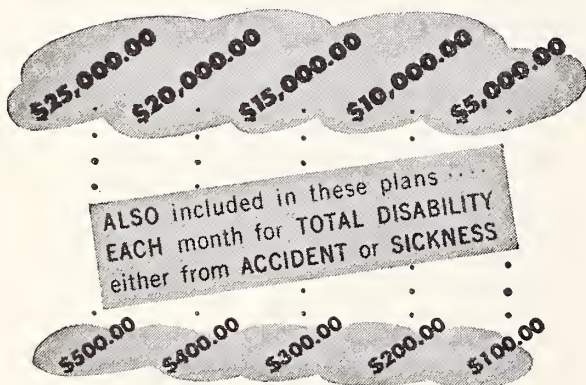
2. Swenson, S. A., Jr.: Minor Surgical Aspects of Closed Wounds, *Am. J. Surg.* 87:384 (March) 1954.

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An outline of procedures and copies of necessary forms have been sent to local and state health authorities. It is important that physicians in areas where vaccinations were not given, cooperate in the study by notifying local or state health officers of cases occurring among children who participated in the trials and then migrated to another area and children who go to summer camps. Local health officials also need information on participating children who receive injections of Gamma Globulin.

This phase of the study will depend, to a large degree, on the wholehearted cooperation of practicing physicians.

American College of Physicians to Use Nationwide TV Closed Circuit Telecast in Connection With Its Postgraduate Program

On Thursday evening, September 23, 1954, from 6:00 to 7:00 P. M., Eastern Daylight Saving Time, the American College of Physicians will utilize television through a national closed circuit over the Columbia Broadcasting System to carry to its members and their colleagues a *Symposium on the Management of Hypertension*. This telecast is made possible through the cooperation and generous support of Wyeth Incorporated of Philadelphia, and will be the *first nationwide* closed circuit hookup for postgraduate medical education.

A "closed TV circuit" is one by which reception is controlled and not open to the general TV public. This telecast cannot be picked up in the home, but the invited audience must go to the TV receiving station. Twenty-three such receiving stations will be used; these will be located in Boston, New York, Philadelphia, Washington, Pittsburgh, Charlotte, Atlanta, Cincinnati, Detroit, Chicago, St. Louis, Milwaukee, Minneapolis, Memphis, Dallas, Houston, New Orleans, Denver, Salt Lake City, Los Angeles, San Francisco, Baltimore and Cleveland.

Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Mansfield Clinic, Thayer Hospital. 3rd Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Caribou, Houlton, Lincoln, Machias, Rockland and Rumford. The Portland Clinic is open daily with a staff of 1 psychiatric social worker and 1 psychologist. The psychiatrist is in attendance on Tuesdays. The other clinics are staffed by a psychiatrist and a psychologist.

Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.

TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

Tuberculosis In Children

By Edith M. Lincoln, M. D., NTA Bulletin, March, 1954.

Chemotherapy has been very useful in reducing the death rate from first infection, often called primary tuberculosis, in children. In many sections of the United States the death rate in children has always been low. Because good control of tuberculosis in adults has been established, there are relatively few active cases and consequently, few children are infected.

The effect of chemotherapy can best be judged in areas where formerly the death rate in children was high. Such a situation is found in the chest clinic of the Children's Medical Service of Bellevue Hospital, a large municipal hospital in New York City. Patients on this service come mainly from families of very low economic level, frequently receiving public assistance, and living in crowded conditions.

Twenty years ago one of every five children admitted to the tuberculosis ward of Bellevue Hospital died of the disease, usually within a year. Most of these children were first diagnosed in the hospital because a tuberculin test was part of the examination on admission. Of those who were admitted with the diagnosis of tuberculosis the great majority had originally been found by contact examinations or by tuberculin tests. The death rate in tuberculous children was unchanged until streptomycin became available late in 1946.

In tuberculous meningitis, which caused 60 per cent of the deaths from primary tuberculosis, the case fatality rate fell to 32 per cent between 1947 and 1951 after chemotherapy was employed. When isonicotinic acid derivatives were introduced in 1952, the case fatality was lowered to about 12 per cent. Before chemotherapy tuberculous meningitis was 100 per cent fatal.

The use of antimicrobial therapy in other serious forms of tuberculosis has been even more effective. Since January 1, 1947, only one child at Bellevue Hospital has died of miliary tuberculosis, which until then was almost 100 per cent fatal, and only one baby died of tuberculous disease of the lung caused by local spread from the primary disease. Thus, in one hospital the case fatality rate from primary tuberculosis and its complications fell from over 20 per cent to 5.0 per cent after streptomycin and to 1.5 per cent after the introduction of isoniazid.

But mere survival is not enough. The great majority of the survivors from meningitis, after long convalescence, are leading normal lives, but a few show remains of the disease in partially paralyzed limbs or in diminished mental capacity. Such poor results seem to occur most often when the meningitis is not diagnosed and treated in an early stage. No one form of treatment will ensure complete recovery from tuberculous meningitis. The most important factors in success would seem to be an awareness of the possibility of tuberculosis and the recognition of the need for vigorous and prolonged therapy. A child with tuberculous meningitis diagnosed late is more likely to die, and if he recovers, is more likely to show evidence of damage due to the disease.

The importance of early diagnosis and prolonged treatment applies equally well to other forms of tuberculosis. A small cavity within a locally progressive primary tuberculosis of the lung without much evidence of pulmonary spread on X-ray will often heal under chemotherapy and remain well. On the other hand, chemotherapy may save the life of a child with more extensive disease but at a later date surgery becomes necessary because a cavity or extensive scarring persists. Even when a complete cure was obtained the child has undergone years of hospital care which might have been avoided by earlier diagnosis of the pulmonary tuberculosis.

Chemotherapy is useful in other complications of primary

tuberculosis. Sometimes in tuberculous disease of the bones or glands a sinus has been formed causing drainage through the skin. In such cases almost magical results have been seen with specific therapy, with prompt closing of the sinus, often permitting surgery which would have been impossible without chemotherapy. In tuberculosis of the intestines the symptoms disappear quickly when the patient receives antimicrobial therapy. Many other forms of tuberculosis are also cured by appropriate chemotherapy.

In other complications of primary tuberculosis, such as disease of the bones, or of the lymph glands, it is hard to evaluate the results of chemotherapy, since such forms tend to be chronic and even without treatment have periods of spontaneous remission. Here again, when the complication is diagnosed before extensive damage is done, cure by chemotherapy or conservative treatment or both often results, whereas in late cases surgery is often required. In some forms of primary tuberculosis, notably in disease of the bronchi or endobronchial tuberculosis, so common in infants and young children, no form of chemotherapy so far devised has appeared to either alleviate symptoms or shorten the course of the disease.

No child should be operated on for a tuberculous complication without receiving chemotherapy during the period of surgery and for a few weeks thereafter. Indeed it may be said that because of the danger of spread of the tuberculous disease, no child with active tuberculosis should receive surgical treatment for any cause without coverage with antimicrobial therapy.

The question of the necessity for specific treatment of uncomplicated asymptomatic primary tuberculosis is still under discussion. There was no reason for treating such cases with streptomycin. With the advent of isoniazid we have a different story. While again there seems to be no clear proof that the disease at the portal of entry is affected for the better, no one has reported a case of clinical meningitis developing in a patient who was receiving isoniazid. This is true even in individuals treated for miliary tuberculosis, a form of tuberculosis in which the meningitis rate has been reported as high as 70 per cent. If these observations can be substantiated, the use of isoniazid must be considered in every child with active primary tuberculosis and possibly in those with recent conversion of tuberculin tests even if chest X-rays are negative. Moreover, it will be necessary to treat with isoniazid for at least a year since it is known that meningitis is most apt to occur during this period. This will be a tremendous task and we should be sure of our facts before undertaking it.

The right way to prove the usefulness of isoniazid in the prevention of meningitis would be to follow a series of children with primary tuberculosis in which some cases are treated for a year and a similar control group is not treated, the selection of cases for each group being made arbitrarily. Such a study is now under way in Bellevue Hospital. Since the incidence rate of meningitis in primary tuberculosis is unknown, a large number of cases may be necessary to decide this important question.

If tuberculous meningitis and other serious complications can be prevented by the wider use of antimicrobial therapy, it will be a great step forward. But it will not eliminate the need for early diagnosis of every child infected with tubercle bacilli before complications occur. Widespread use of the tuberculin test in schools and hospitals and by private physicians is needed in order to promote early diagnosis of tuberculosis and augment the usefulness of chemotherapy in prevention as well as treatment.

(The printing of Tuberculosis Abstracts is made possible by the cooperation of your local tuberculosis and health association.)

*From Vol. XXVII, August, 1954, No. 8.

1954 Golf Tournament—Continued from page 232

Exhibitors

Rocco Maffei—Cigarette Lighter, Maine Surgical Supply Co.

Leo Curran—Cigarette Lighter, Michael B. Salvetti.

Bob Blanchard—Cigarette Lighter, Maine Surgical Supply Co.

Guests

Mr. Leonard E. Read—Cigarette Lighter, Maine Medical Association.

Once again Searle's Hand Lotion was a prize for everyone, as it gradually disappeared from the prize table.

The committee takes this opportunity to express its appreciation to the companies listed above for the prizes donated for this tournament.

FRANCIS A. WINCHENBACH, M. D.,
Chairman, Golf Tournament.

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FOCI OF OCULAR INFLAMMATION

JAMES E. POULIN, M. D.*

A great many ocular inflammations have an obscure etiology, and in the absence of a definite causative factor, are thought to be due to the presence of a focus of infection in an other part of the body. In many cases it is impossible to prove that a particular focus of infection is responsible for the disease involving the eye. In some instances, it is possible to prove a foci of infection guilty when the purulent material from the eye and the foci of infection are found to be identical by bacteriological examination. In other cases, it is assumed that the ocular manifestation was directly caused by a focus in some other part of the body, because of the fact that the eye condition improved when the suspected focus of infection was removed.

TYPES OF FOCAL INFECTION

The most common forms of focal infection are unquestionably the streptococcus and the tubercle bacilli. The former usually originates from the teeth, tonsils and sinuses, while the latter from the lungs. However, the prostate gland and the urethra are occasionally responsible factors. From an ophthalmological standpoint, the most common foci are the teeth, tonsils, and nasal sinuses in that order. The lungs in a small percentage of cases serve as a site of infection, and the latent or quiescent tuberculosis may involve the eye in the form of an allergic reaction which is most difficult to cope with.

Modern chemotherapy has almost eliminated the

prostate gland and the urethra as the seat of ocular infection. However, prior to the advent of sulfonamides and penicillin, the gonococcus organisms produced cases of iritis and iridocyclitis of such a severe nature that the infection resisted the most vigorous treatment.

DENTAL AFFECTIONS

I have listed dental affections as the number one foci of infection responsible for ophthalmic complications. Foremost among these are the apical and periapical abscesses. Dental causes, such as septic roots and degeneration of the pulp also play a part in this vicious circle. Apical abscesses and pulpless teeth are usually unsuspected as they are most often free from symptoms. Because the teeth are in many cases responsible for the ocular lesion it is a wise policy to eliminate foci by careful examination and roentgen study. The methods of extension of the infection from the teeth to the eyes is not definitely determined, but it is thought that the transmission of organisms from a dental focus to the eye may occur through the blood stream or lymph channels. In some instances, it has been proven that the extension runs along the periosteum through the malar bone up to the orbit. The organisms most commonly involved in this type of infection are the streptococcus viridans and hemolyticus.

Teeth serving as foci of infection may be the cause of many and varied types of eye involvement. The most common site of ocular lesions is the uveal tract.

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Other inflammatory manifestations of dental origin may occur in the form of episcleritis, keratitis, conjunctivitis, visual disturbances, and even orbital cellulitis. Many authors feel that infected teeth serve as a focus of infection in ocular inflammations in as high as 40% of all cases. Considerable controversy has existed regarding the extraction of infected teeth during the acute phases of the eye manifestation. Some have felt that the extraction of the guilty tooth would tend to increase the severity of the ocular inflammation. However, it is now generally concluded that the benefits derived from the immediate removal of the focus of infection out-weigh the slight risk involved.

TONSILS AS FOCI

The tonsils merit serious consideration as a focus of infection in an inflammation involving the deep structures of the eye. Statistics vary with regard to the frequency of occurrence of ocular disease resulting from tonsils, but the average is about ten per cent. Infected tonsils produce the same type of eye complications as have been described under infected teeth. It is very difficult if not impossible, to tell whether a pair of tonsils seen in the quiescent stage are a possible source of infection. However, if there has been a history of tonsillitis in the past, or if the anterior pillars are injected, I feel that it is justifiable to advise the removal of the tonsils.

SINUSES AS FOCI

Acute or chronic infections of one or more of the sinuses may reveal eye manifestations, and a pansinusitis is very apt to be accompanied by some form of orbital or ocular involvement. When one considers that the sinuses lie in such close anatomic relationship to the orbit, and in many cases being separated by a wall of less than a millimeter in thickness, it is readily understood why sinus disease is so often a focus for lesions in the eye. Sinus disease not only involves the eye in the same manner as do teeth and tonsils, but in addition the lacrimal apparatus is frequently involved, and also retrobulbar neuritis is occasionally the direct result of an existing sinus infection. Volumes have been written with regard to the etiology of these severe dangerous eye complications, and although opinions are still divided, most authorities feel that infected sinuses play a major role in the etiology. It is especially felt that the ethmoids and sphenoids are most prone to produce optic neuritis, and the maxillary sinuses are seldom the causative focus. However, in recent months, I observed a well-defined case of retrobulbar neuritis which cleared up after an infected maxillary sinus was eradicated.

OTHER FOCI

Among the other systemic infections which less

commonly serve as a foci of ocular inflammation are the granulomatous diseases such as syphilis, tuberculosis, sarcoidosis and brucellosis. Since the recognition and treatment of endogenous ocular inflammation is one of the more common and serious problems confronting the ophthalmologist, it is within the scope of this paper to suggest etiological studies.

DIAGNOSIS

Consultative and laboratory work should be as modest as possible, rather than burden the patient with unnecessary expense. The history, physical examination, X-rays and laboratory studies should be aimed toward exposing the possible presence of infected teeth, sinus disease, tuberculosis, syphilis, brucellosis and possible infections of the urinary tract. An attempt should be made to correlate the onset of ocular inflammations with the onset of some systemic disease. The first diagnostic step should be that of X-ray studies of the patient's teeth and sinuses. If these do not prove to be the site of infection, then X-ray films should be made of the chest to rule out the presence of tuberculosis or sarcoid. Having exhausted this mode of study, then laboratory tests should be resorted to. It is a well-known fact that few laboratory tests are diagnostic in themselves, but when the findings are correlated with the physical findings and history, they help to make possible a presumptive diagnosis.

The most commonly used laboratory tests which are employed in respect to this problem are, one, urinalysis, to determine the possibility of genito-urinary infection, and which at the same time rules out diabetes. Two, blood serology, which will eliminate syphilis and agglutination; titre studies for brucellosis can be carried out at the same time. Three, a serum globulin test will show an elevation of the same if sarcoidosis is suspected. Even after these diagnostic studies have been exhausted, it is in many cases, impossible to render an etiologic diagnosis in a patient with endogenous uveitis. If these routine examinations fail to point out the origin of the infection, then one may be reasonably certain that it will likewise be impossible to do so, even with the best surveying facilities of the larger clinics. Some authors state that in as high as fifty per cent of the cases, no clues can be disclosed as to the etiology.

SUMMARY

In summary, I repeat, that in cases of severe endogenous inflammatory diseases of the eye, the teeth and sinuses must be investigated by X-ray studies because therein lies the best possibility of locating the focus of infection. If X-ray studies of the chest show no pathology and the serology proves negative, then removal of the tonsils should be considered if they present but the slightest suggestion of disease.

ENDOMETRIAL CARCINOMA

L. ARMAND GUITTE, M. D., and GEORGE E. FARRELL, M. D.*

Incidence: Endometrial carcinoma comprises 2 to 3% of primary carcinoma in women, and occurs in a ratio of 1 to 3.8% to carcinoma of the cervix according to Swinton.¹

Symptoms: Spotting has been the commonest complaint of patients with carcinoma of the endometrium in 88.5% of one reported series. Enlargement of the uterus may or may not be present at the time of examination. Enlargement of the ovary may be the first sign of carcinoma present in some women with secondary involvement of the ovary by primary endometrial carcinoma.

Diagnosis: The Papanicolaou has limitations as a screening procedure as noted by numerous observers. Its accuracy varies with the experience of the cytologist. Of 92 patients with positive vaginal smears, 62% were proven to have carcinoma in Swinton's² series. The same observer points out that this doesn't signify that any patient in her early twenties or thirties should have a hysterectomy if the smear is positive, but other measures such as cervical biopsy and a D & C should be done. If these are negative, the patient should be kept under close observation.

In the older age group, if the smear is positive, the evidence is strongly presumptive but not absolute. If, however, the smear or D & C is negative, it certainly does not rule out the diagnosis of carcinoma.

Differential Diagnosis: Some of the difficulties may arise in cases suspected of bleeding due to estrogenic stimulation from post-menopausal symptoms. It is very significant that many patients who are operated on because of vaginal bleeding, apparently for benign lesions such as fibroid, are found to have unsuspected endometrial carcinoma.

It would seem reasonable to assume, therefore, that any woman who presents herself with a history of spotting, particularly in the post-menopausal state, that carcinoma of the uterus exists, unless it can be proven definitely otherwise.

The difficulty in proving otherwise can be illustrated by the following case report:

CASE REPORT

Mrs. E. L., age 52, Para 11, was first seen in November, 1952, with a story of vaginal spotting of two months duration. Menopause occurred at 45. There had been no vaginal bleeding since then. The past history revealed that the patient had a Cesarean section and also a subtotal thyroidectomy for a toxic

adenoma of the thyroid. Her medical history was negative.

A general physical examination was negative. Bimanual pelvic examination showed the cervix not eroded, and there was no enlargement of the uterus. There was no gross evidence of malignancy. There was no adnexal pathology.

D & C, plus a Papanicolaou was done, and both were reported as negative.

It was decided to keep the patient under close observation. Because malignancy could not be ruled out, definitely, conservatism was carried out with a good deal of trepidation.

The patient was re-admitted to the hospital on January 3, 1954. A second Papanicolaou and D & C were also reported as negative. Even with these negative findings, because of persistent bleeding, it was decided to do a laparotomy. The abdomen was prepared, and opened through a lower midline incision. There was no gross evidence of malignancy inside the peritoneum. The fundus of the uterus was attached to the anterior wall by old adhesions from the previous Cesarean section. Examination of both ovaries was essentially normal. The left tube showed occlusion of the fimbriated end of the tube. In the middle of the tube, there was a patch of induration which was yellowish, apparently due to intraluminal pathology. The right tube was also occluded, and was fastened down to parietal peritoneum just below the cecum. This was liberated by sharp dissection. A pan-hysterectomy was then performed. The pathological report by Dr. Irving Goodof is as follows: "The external surface of the uterus is not remarkable. The myometrium is 1.5 cm. in thickness. The endometrium is everywhere hyperplastic, somewhat hemorrhagic, irregular and necrotic. It grossly suggests a neoplastic process within the endometrium, but not having invaded the wall at any point which might possibly be grossly recognizable. Multiple sections show the hyperplastic process to be entirely limited to the endometrium. At no point is there any evidence of myometrial invasion. The cervix shows no recognizable pathological changes.

Microscopic examination: The uterus shows replacement of the endometrium by a varying type of epithelial neoplasm showing in one area a distinct papillary glandular structure and elsewhere solid sheets of anaplastic cells with considerable mitotic activity and considerable necrosis. The superficial portion of the endometrium is everywhere papillary and friable. In a few areas there is a definite invasion of the myometrium by masses of anaplastic cells, sur-

* Sisters' Hospital, Waterville, Maine.

rounded by considerable lymphocytic infiltration. Sections of the Fallopian tubes show on either side almost complete filling of the lumen of the tube by a papillary mass of anaplastic glandular structures which are closely packed and show very little stroma. There is moderate lymphocytic infiltration in some areas. The tumor in the tube, and the tumor in the endometrium, in some areas are identical, and it is conceivable that this type of tumor may have originated in either of these two locations. It is possibly somewhat more logical, that the tumor originated in the tube and progressed by gravity and by action of the tubal wall into the endometrial cavity where it implanted itself and began to grow. It is less likely that the tumor originated in the endometrium and proceeded in a retrograde direction to involve the tube. A section of the cervix shows normal general structure, some mucosal erosion with lymphocytic infiltration. The ovaries are sclerotic and contain single atretic cyst. Diagnosis: Uterus: Adenocarcinoma of the endometrium, Grade 111. Cervix: Chronic cervicitis with erosion. Tubes: Metastatic papillary adenocarcinoma. Ovaries: Sclerosis."

Comment: This is an extremely interesting case, and it proves why it is difficult to always make a positive diagnosis of malignancy. Apparently, from the pathological report, it would seem that the carcinoma first started in the left tube and progressed by gravity to the endometrium. No amount of curettings could obtain a positive report, particularly in the early stages of the disease, because the lesion started in the tube. It is fortunate that both tubes were occluded, because this stopped the spread of the malignancy to the ovaries and to the parietal peritoneum.

One must consider that the over-all gross salvage of cases of endometrial carcinoma is only 50% in five years. One of the reasons for this poor salvage rate is no doubt due to the fact that the patients often put off seeing the doctor in time, and a great many of the cases show up after they have been bleeding for a period of six months or more.

Treatment: The treatment of choice is panhysterectomy with or without radiation. That includes not only both tubes and ovaries, but also a generous por-

tion of the vaginal cuff. Some also do a radical pelvic node dissection.⁹ The main controversy centers about the preoperative use of radium. Many authors claim that the use of radium increases the five-year survival rate from 10% to 30%.^{3, 4, 5, 6} Others oppose this view.¹ The methods employed in the application of radium are widely discussed in the literature.^{4, 6, 7, 8, 9, 11}

SUMMARY

1. Vaginal spotting is the predominating symptom in endometrial carcinoma.
2. Positive Papanicolaou, particularly in the post menopausal bleeding, is highly presumptive evidence of carcinoma.
3. Negative Papanicolaou or D & C does not necessarily rule out malignancy. With persistent spotting, particularly in the post menopausal patient with negative findings, the patient should be submitted to panhysterectomy.

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CORRECTION

In the August, 1954, issue of the JOURNAL there is an error in the article by the Executive Secretary, W. Mayo Payson, which appears on page 237 and is entitled "Legislature 1955."

The next to the last paragraph of this article should read; "In the haste and hurly-burly of these 16 or 17

week sessions people interested in legislation do not have unlimited time to study and ponder; they must make decisions and act on them. This applies as much or more to those outside the legislature as to those in it."

CONGENITAL FISTULA TRACT TO BLADDER

Case Report

O. F. POMERLEAU, M. D., A. I. C. S.*

A white female child, age 2, had been under office observation from time to time since birth for a persistent discharge on the lower abdomen over the pubic bone. The mother had noticed this discharge from birth. The mother stated that at times it was quite profuse.

The child was of normal growth for her age. The heart and lungs were found to be normal. The abdominal examination was normal except for a fistulous opening over the pubic bone in the midline. Pressure around this tract opening produced a whitish discharge. It was evident to me that we were dealing with a congenital malformation and that it was associated with the bladder.

Special examination: Urinalysis revealed no albumin or sugar. Blood count showed 4,300,000 red blood cells and 14,500 white blood cells, with 48% polyps and 50% lymphocytes. X-ray report: The sinus tract was injected with barium. The radiological film showed a tract going down toward the symphysis pubis with an oval collection superficial to the left pubic bone. No connection to the bladder could be seen on this film. It was the Radiologist's opinion that we were dealing with a dermoid cyst or perhaps a superficial cutaneous cyst.

Surgical consultation: It was the consultant's opinion that the patient was suffering from a dermoid cyst.

OPERATION

The patient was prepared for surgery. Under general anesthesia, the skin around the opening was excised elliptically and the sinus tract was then dissected.

This was followed until the symphysis pubis was reached. The tract was then seen to disappear into the junction of the symphysis pubis. The periosteum was removed around the tract, which was seen to penetrate through a small opening into the bone. Dissection was stopped. The tract was doubly ligated and excised. The skin was closed with black silk.

Pathological report: The specimen consisted of a string-like piece of dark tissue, 3.5 cm. in length and 2 mm. in diameter. At one end can be seen a small patch of skin. No lumen could be seen at this time as the tissue was already fixed. Microscopically, the tract was lined with squamous epithelium and several bundles of muscle as found in the bladder wall. Pathological diagnosis: Congenital malformation leaving a fistulous tract to the bladder.

Discussion: In the embryo, the bladder is an open sac communicating with the lower abdominal wall. If failure of union of the lateral parts of the urogenital cleft occurs, we have congenital exstrophy of the bladder. If the closure is not complete, a small tract may be left, communicating with the bladder. This is what happened in this case.

Course: The child has been followed for three years and there has been no recurrence.

SUMMARY

A case of congenital fistulous tract to the bladder in a child of two is presented. A review of the literature or textbooks fails to discuss this particular anomaly of the bladder. The diagnosis is not as easy as it appears. A diagnosis of dermoid cyst was favored by those seeing this case in consultation. Treatment consisted of simple excision with double ligation.

* Surgical Staff, Sisters' Hospital, Waterville, Maine.

AMEF Nears One Million Mark

Several large contributions from state medical associations have boosted the American Medical Education Foundation nearer to its goal of two million dollars in 1954. The California Medical Association recently contributed \$100,000. Another large contribution came from the Arizona Medical Association in the amount of \$7,230, which represents a \$10 per

member dues increase voted for AMEF by the association. Both Arizona and Utah have followed Illinois physicians by voting a dues increase as a method of increasing contributions from their states.

Since January 1, 1954, the Foundation has received a total of \$968,000 and expects to reach the one million mark in September.

DETACHED RETINA

RICHARD J. GODUTI, M. D.,* Portland, Maine

Detached Retina is one of the chief causes of blindness today. The surgical treatment of this condition has changed significantly in the past 15-20 years and the percentage of successful results has now risen to a point where the disease no longer is looked upon with despair and hopelessness, as was too frequently the case in the past. In fact it is felt by many that the modern treatment of Detached Retina stands out as the single greatest advancement in ophthalmology in the present generation.

Detached Retina is a condition in which there is a splitting of the retinal layers and a peeling off of the bulk of the retina from the inner layers of the eyeball. As to the etiology it can only be stated that it is usually associated with degenerative conditions of senility or myopia affecting retina and vitreous, or with small infective lesions of the uveal tract, particularly peripheral choroiditis, and is not infrequently anteceded by trauma. In many cases the predisposing factor may be present in both eyes thus increasing the gravity of the disease. The only symptom is impairment of vision and when this becomes obvious the patient complains of a veil or cloud appearing before the eye. Sometimes this may occur abruptly and at other times it may be ushered in by the sensation of flashes of light or the sudden appearance of spots before the eye. Diagnosis is easily made with the ophthalmoscope. The retina assumes a characteristic greyish tint and the surface is thrown into folds which oscillate with movements of the eye. The blood vessels appear black, much smaller than normal, and due to undulations of the retina they assume the form of tortuous cords. Closer study usually reveals one or more holes or tears in the retina. If untreated the detachment almost invariably increases until the entire retina is involved and loss of sight is complete.

The only treatment is surgery. Until recently the operative results were most discouraging, probably no better than 50-60% in the most favorable cases. As to the extensive or complicated group of detachments they were generally considered hopeless and in many instances treatment was not even attempted. Fortunately, as stated above, the picture has improved considerably. This is due to several factors. We now have a better understanding of the etiology and pathology of the condition. The significance of retinal breaks is fully appreciated. It is imperative that these be sealed off to insure a successful result. Improved methods of pre-operative examination allow for a more extensive study of the retina and a more accu-

rate localization of holes or tears. In this connection mention should be made of the recently developed method of indirect ophthalmoscopy. Conventional direct ophthalmoscopy allows one to visualize the retina only slightly beyond the equatorial region which is only about $\frac{2}{3}$ of the total surface. With the new indirect method the remaining $\frac{1}{3}$ of the retina is visualized. Since the peripheral retina is the least vascular and therefore degenerates more easily, the greatest number of retinal breaks are found in this area. Thus, much pathology which heretofore could not be seen is now easily detected and treatment may be directed accordingly.

With improvement in technique of the conventional Retinopexy operative results in carefully selected cases with a good prognosis have improved to approximately 60-70%. Briefly, this procedure consists of exposing that part of the globe corresponding to the area of detachment. Coagulating diathermy is applied about the site of any holes or tears with a needle which only partially penetrates the sclera. Accurate placement of these diathermy points is extremely difficult and only with the closest cooperation between the operator and his assistant, who carries out repeated examinations of fundus with the ophthalmoscope during the operation, can this be done. Sub-retinal fluid is then drained by making a perforation through the sclera and choroid with a penetrating needle. In addition a series of surface diathermy points may be applied in such a fashion as to wall off the major extent of the detachment. The release of sub-retinal fluid allows the retina to fall back into its normal position against the choroid. This combined with the acute inflammation of the choroid produced by the diathermy results in chorioretinal adhesions and reattachment of the retina.

In the more difficult cases, however, the operative results with this procedure have shown no improvement. Such cases include:

- (1) Detachment with high myopia.
- (2) Detachment in eye which has had previous cataract extraction.
- (3) Extensive detachment, involving more than $\frac{2}{3}$ of the retina.
- (4) Traumatic detachments with large disinsertions of margin of retina.
- (5) Detachment associated with vitreous strands or Retinitis Proliferans, a condition in which scar tissue formation produces traction on the retina.
- (6) Detachments in which one or more conventional retinopexies have failed.

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It is in such cases that the scleral resection has proved to be of great value. It consists fundamentally in the excision of a circumferential strip of sclera and the suturing together of the free margins, producing in effect a shortening of the globe. Coagulation diathermy is applied over the site of excision of sclera and subretinal fluid is drained as with conventional retinopexy. The idea of this operation is not new. The first case was reported in 1903. Following that it was performed infrequently and sporadically with equivocal results only to fall into the discard for several years. In 1933 it was again revived and increasing interest has been shown in it up to the present time. Results have been sufficiently gratifying to establish it permanently in the treatment of retinal detachments.

There are many modifications of the scleral resection operation. The following is a brief outline of the technique currently employed at the Maine Eye and Ear Infirmary:

Local novocaine anaesthesia is employed. That part of the globe overlying the detachment is exposed through a long conjunctival incision, and if necessary one or two of the rectus muscles are temporarily detached. A strip of sclera extending through about one-half its thickness and measuring 3-5 mm. in width and anywhere from $\frac{1}{4}$ to $\frac{2}{3}$ of the ocular circumference in length is excised. This is generally removed in a circumferential direction as far back towards the equator of the globe as possible, the anterior edge being usually about 13 mm. from the limbus. Diathermy is applied to the area exposed by the resection, and also in the region of any retinal holes or tears which may be present. (Fig. 1) Subretinal fluid is drained through a prepared sclerotomy with a needle which penetrates sclera and choroid. The scleral edges are then closed with a series of silk mattress sutures. (Fig. 2) Finally a row of diathermy points is continued from the ends of the scleral resection to the ora serrata, thus walling off completely that area of retina containing significant pathology. (Fig 3)

This operation affords several advantages over the conventional retinopexy. The intensity and extent of choroidal inflammation produced by the diathermy is more accurately controlled with removal of some of the intervening scleral tissue. As a result of the resection a marked shortening of the outer coat of the eyeball is produced. In addition there is a buckling inwards of the remaining sclera and underlying choroid at the suture line. This results in bringing the choroid in much closer approximation to the retina thus facilitating the formation of chorioretinal adhesions. (Fig. 4)



Fig. 1

Resection of Sclera and application of diathermy points.

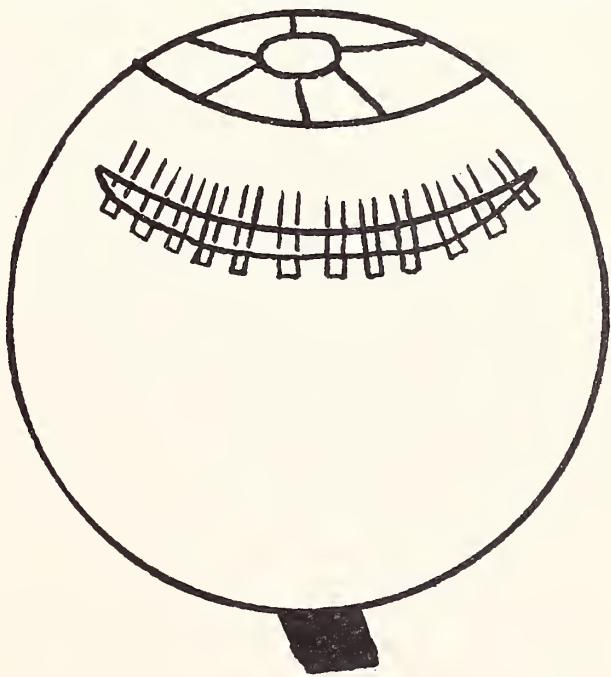


Fig. 2

Placement of mattress sutures.

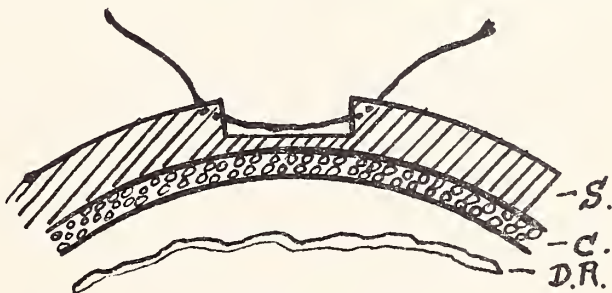


Fig. 2

S—Sclera C—Choroid D.R.—Detached Retina.

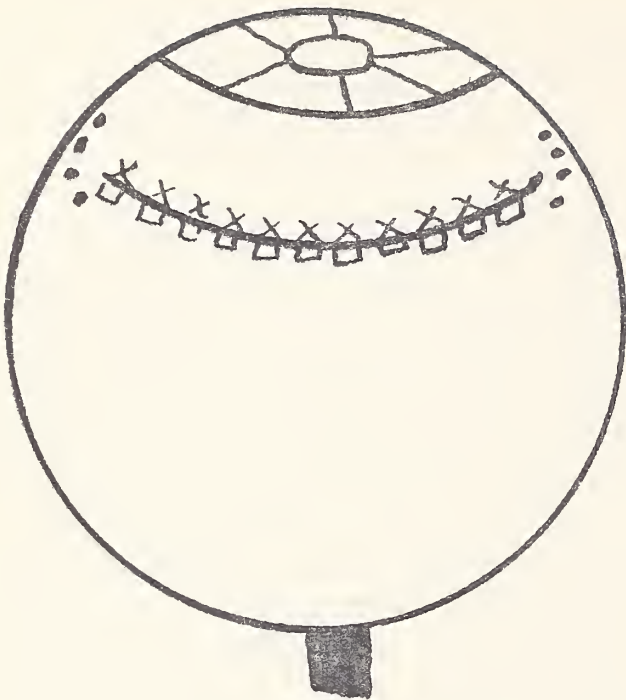


Fig. 3

Closure of resected area with further diathermy.

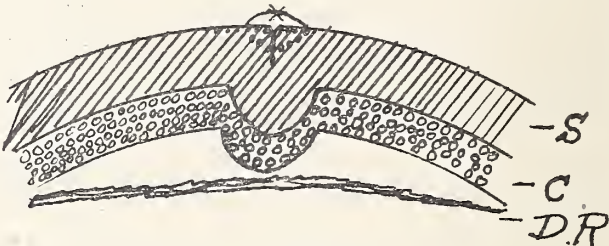


Fig. 4

S—Sclera C—Choroid D.R.—Detached Retina.

New Medical TV Show — “Medic” — On NBC-TV

Of special interest to all TV-viewing physicians is NBC-TV’s revolutionary new program, “Medic,” which was first beamed across the country September 13. Sponsored by the Dow Chemical Company, this new “Dragnet”-type show will bring to millions of Americans a better understanding of the role of modern medicine in their daily lives.

A dramatic, informative and authentic program, its various doctor-patient sketches touch on all phases

of life, both historical and contemporary. No single character will run through the series, but medicine itself will be the “star.”

“Medic” is being presented Monday evenings at 9 p. m. EST, three times monthly. Producers are ex-“Dragnet” writer James Moser and veteran TV and stage producer Worthington “Tony” Miner. The Los Angeles County Medical Association will lend technical assistance.

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THE PRESIDENT'S PAGE

The Fee-Splitting Question

Fee-splitting, meaning by that term the secret rebate from a specialist to the referring colleague, is a low, underhanded, discriminating practice. It tends to create suspicion within the profession and degrade the standards of medical care. It is rightly considered unethical. However, comparable practices exist in other professions and businesses and it does not quite deserve the fervor with which it is attacked by certain magazine feature writers. Their technique, obviously, is to concentrate on a profession. The unnecessary operation has also come in for a share of attention. In Journalism, to attract attention everything has to be headline stuff. The issue must be "dynamic," "colossal." Thus we see "Some Doctors ought to be in Jail." I cannot but believe that such intemperance of expression overshoots its mark and that the more intelligent reader sees it for what it is: Yellow Journalism. Peace, and it will pass to some other target.

Nevertheless we should give thought to whether fee-splitting is prevalent in our communities. There have always been shady characters in all professions and businesses. I may be naive but I do not believe fee-splitting is prevalent in Maine, and as far as being a menace to the public it is not the monster it is painted. No man is going to refer patients long to incompetent consultants. The chief evil is a degradation of character in those who practice it. It is more in line with what our legal brethren in their own profession call Ambulance Chasing, Contingent Fees, etc. It is of course tied in with the unnecessary operation which is being given publicity of late. That may be a subject of another article. One factor that may sway those of something of less than strict probity is the glorification of the surgeon as the big man in the picture which has relegated the general practitioner to a subordinate position. It should be perfectly proper for him to render a charge *openly* commensurate with the seriousness of the condition. I believe we shall see the day when medical fees as distinguished from surgical will be based not on the number of calls but on the value of the service rendered.

Some of the remedies currently advocated for the correction of fee-splitting seem rather puerile. Rendering of separate bills while perhaps good form cannot stop a secret kickback. These might be detected if it were possible to examine books or income tax returns. As to the legality of such a procedure I cannot state. We come back to about the only remedy which has ever succeeded in combatting professional or political chicanery, namely selecting men of character and integrity as our public servants or personal advisers. Medical schools should take notice that character may be of more importance than scholarship in selecting applicants.

ROBERT W. BELKNAP, M. D.,
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The Journal of the Maine Medical Association

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The President's Page

We feel that the JOURNAL of the Maine Medical Association has lost an interested and active supporter in the death of our President, Dr. Robert W. Belknap of Damariscotta.

He conferred frequently with the Editor and advanced ideas for making the JOURNAL a clearing-house for controversial subjects and a sounding board for critical opinions. And, in furtherance of these discussions, he submitted comments on three aspects of his views for publication.

The first contribution outlined his understanding of the duties of the President of the Association. We thought that his concepts, published in the July issue of the JOURNAL, bespoke a calm attitude toward the problems of our organization and a recognition of the fact that different opinions frankly expressed keep county and state meetings in a healthy condition. And he advocated a "Letters to the Editor" column as a method of bringing views to the membership. With this proposal the Editorial Board enthusiastically agrees.

In August, the JOURNAL published comments from the President, Dr. Belknap, on the "Abuse of Blue Cross and Blue Shield." The article presented a straight forward, succinct review of a complex situation. The patients viewpoint and the doctors viewpoint were given consideration as affecting the Blue Cross organization and the hospitals. In summary

he said, "We should use extreme care and diplomacy in avoiding misuse of a valuable privilege. Remember the Golden Egg. Bear in mind that the objectives are a large group of subscribers at fair rates and a satisfactory return to the burdened hospitals all of which are direct corollaries of a fair selection of cases for hospitalization." We commend the article to our members for "a good think."

The final contribution, and we regret that sad circumstances make it the final one, deals with "The Fee-Splitting Question" and appears in this issue of the JOURNAL. The opening sentences leave no doubt in the reader's mind about our late President's feeling on Fee Splitting. Although the language of the first paragraph is definite and strong the article in general displays a temperate attitude but bristles a little in defense of the practitioners of the art of medicine. The remedy is not ready at hand writes Dr. Belknap but men of good character and integrity by example and precept will obstruct unethical conduct and create respect for high standards of practice.

It seemed to us as we read over Bob's comments that he cherished the good reputation of the medical profession, that he had, in quiet hours, reflected seriously on our problems and that he was anxious to help the members of the Association to keep the record straight and to worship no false Gods.

Trends in Infant Feeding

The May, 1954 Issue, Volume 9, No. 2, of the *Quarterly Review of Pediatrics*, published as a leading article a Forum entitled, "Trends in the Early Feeding of Supplementary Foods to Infants." Dr. Allan M. Butler of Boston served as Chairman of

the Forum and Dr. Irving J. Wolman of Philadelphia, Editor-in-Chief of the *Quarterly Review of Pediatrics*, served as his associate.

The first part of the analysis, as published in the
Continued on page 256

PROGRAM

FALL CLINICAL SESSION

Maine Medical Association

Portland, Maine

September 24 and 25, 1954

HEADQUARTERS

Eastland Hotel

157 High Street, Portland

Sponsored by the Maine Cancer Society

COMMITTEE ON ARRANGEMENTS

Benjamin Zolov, M. D., *Chairman*

Harold L. Osher, M. D.

Leon Babalian, M. D.

Donald H. Daniels, M. D.

Carl E. Dunham, M. D.

PROGRAM

Friday, September 24, 1954

6.30 P. M.

Dinner Meeting — Eastland Hotel

(For physicians and wives)

Presiding:

William F. Mahaney, M. D., *Saco; President, Maine Medical Association*Isaac M. Webber, M. D., *Portland; President, Maine Cancer Society*

Speaker:

SERGEI H. FEITELBERG, M. D., *Director Department of Physics, Mt. Sinai Hospital, New York*

Subject:

CLINICAL APPLICATION OF RADIO ACTIVE ISOTOPES

Saturday, September 25, 1954

MORNING SESSION

Ballroom — Eastland Hotel

9.00 James M. Parker, M. D., *Portland, presiding*

CONTROVERSIAL ASPECTS OF THE THYROID CANCER PROBLEM

THOMAS J. ANGLEM, M. D., *Boston; Assistant Professor of Surgery, Boston University School of Medicine*10.00 Eugene E. O'Donnell, M. D., *Portland, presiding*

CHANGING CONCEPTS IN TREATMENT OF GASTRIC CANCER (to include end results)

GORDON McNEER, M. D., *New York; Professor of Surgery, Cornell University Medical College*11.00 Emerson H. Drake, M. D., *Portland, presiding*

THE DIRECT APPROACH TO SHADOW AND SUBSTANCE

RICHARD H. OVERHOLT, M. D., *Brookline; Clinical Professor of Surgery, Tufts College Medical School*

12.30 P. M.

Luncheon

Round Table Discussions: Conducted by Thomas J. Anglem, M. D., Gordon McNeer, M. D., Richard H. Overholt, M. D., and Cushman D. Haagensen, M. D.

AFTERNOON SESSION

2.15 Dining Room 1 — Eastland Hotel

American College of Surgeons Committee on Fractures and Trauma

Thomas A. Martin, M. D., *Portland, presiding*

SOFT TISSUE INJURIES OF THE KNEE JOINT

THOMAS B. QUIGLEY, M. D., *Peter Bent Brigham Hospital, Boston*

TREATMENT OF RECENT WOUNDS OF THE HAND

CHARLES B. BURBANK, M. D., *Department of Surgery, Harvard Medical School*

2.15 Ballroom — Eastland Hotel

Program sponsored by Maine Trudeau Society

George E. Young, M. D., *Skowhegan, presiding*

OBJECTIVES OF THE MAINE TRUDEAU SOCIETY

LESTER ADAMS, M. D., *Greenwood Mountain; President, Maine Trudeau Society*

RADIOLOGY IN TUBERCULOSIS, EMPHASIZING DIAGNOSIS

JACK SPENCER, M. D., *Portland; Chief of X-ray Service, Maine General Hospital*

BACTERIOLOGY AND PATHOLOGY IN DIAGNOSIS OF TUBERCULOSIS

IRVING I. GOODOF, M. D., *Waterville; Pathologist, Thayer Hospital, Redington Memorial Hospital and Central Maine Sanatorium*

SUMMARY OF MEDICAL ASPECTS

GEORGE W. WOOD, III, *Bangor; Internist, Eastern Maine General Hospital; Medical Director, Bangor Sanatorium*

- 3.15 Ballroom — Eastland Hotel

Eugene P. McManamy, M. D., *Portland, presiding*

THE ROUTES OF SPREAD OF BREAST CANCER AND THEIR BEARING ON TREATMENT

CUSHMAN D. HAAGENSEN, M. D., *New York; Associate Professor of Surgery, Columbia University College of Physicians and Surgeons*
- 6.30 P. M.

Dinner Meeting — Eastland Hotel

(For physicians and wives)

Presiding :
Joseph E. Porter, M. D., *Pathologist, Maine General Hospital, Portland*

Speaker :
SIDNEY FARBER, M. D., *Pathologist, Boston Children's Hospital*

Subject :
PROGRESS IN RESEARCH RELATING TO CANCER IN MAN
- 4.15 Ballroom — Eastland Hotel

Donald H. Daniels, M. D., *Portland, presiding*

ENDOSCOPIC AIDS IN DIAGNOSIS

EDWARD B. BENEDICT, M. D., *Endoscopist, Massachusetts General Hospital, Boston*

NOTICES

- REGISTRATION

The Maine Medical Association Registration desk will be in the lobby at the Eastland Hotel and will be open on Friday, September 24 from 5.00 to 6.30 P. M. — Saturday, September 25 from 8.30 A. M. to 6.30 P. M. No Registration Fee.
- MEETING PLACE

All of the sessions will be held in the Ballroom at the Eastland Hotel, with the exception of the meeting of the American College of Surgeons Committee on Fractures and Trauma which will be in Dining Room 1 at the Eastland Hotel.
- LUNCHEON AND DINNER TICKETS

Will be on sale at the Association's Registration desk. Dinner tickets Friday evening will be \$3.50 per person. Luncheon tickets Saturday will be \$2.50 per person. Dinner tickets Saturday evening \$4.00 per person. These prices include tax and gratuities.
- ROOM RESERVATIONS

Should be made direct with the Manager of the Eastland Hotel, 157 High St., Portland 3, Maine.
- COMMITTEE MEETINGS

Tuberculosis Committee of the Maine Medical Association,
Dr. Edward A. Greco, Portland, Chairman.

There will be a breakfast meeting of this committee at the Eastland Hotel on Saturday, September 25 at 8.30 A. M.

Editorial Board of The Journal of the Maine Medical Association, Dr. Thomas A. Foster, Portland, Editor.

The Editorial Board will meet at the Eastland Hotel, Saturday, September 25 at 5.00 P. M.

PROGRAM

WOMAN'S AUXILIARY
TO THE
MAINE MEDICAL ASSOCIATION

- Friday, September 24, 1954

6.30 Dinner Meeting, Eastland Hotel
(See Maine Medical Association Program)
- Saturday, September 25, 1954

9.30 Registration, Eastland Hotel

10.30 Executive Board Meeting
(Place to be announced)
Mrs. Frank W. Barden, *President, Woman's Auxiliary to the Maine Medical Association, presiding*

1.00 Luncheon and Business Meeting
Venetian Room, Columbia Hotel, 645a Congress Street, Portland

4.00 Tea at the Victoria Mansion
109 Danforth Street, Portland
Compliments of the Woman's Auxiliary to the Cumberland County Medical Society

6.30 Dinner Meeting, Eastland Hotel
(See Maine Medical Association Program)

Trends in Infant Feeding—Continued from page 252

Quarterly, deals with the tabulation of the data which was received in over 2,000 replies. It is estimated that the data contains information provided by pediatricians caring for over 500,000 infants; one-seventh of all the infants born in the United States during a year.

The tabulated data were submitted to a group of authorities in the field of infant welfare and nutrition. Practitioners from all sections of the country and faculty members of different medical schools participated in the discussion. The approach to the data under consideration is scholarly, careful and tolerant. Names familiar, indeed, to doctors at all interested in the care and welfare of children make up the list of discussors.

Nine of the ten authorities who reviewed and discussed the data must be counted on the conservative side; one reported that he thought that the infants thrived and every one was happy. The conservatives believed that breast milk and milk formulas plus vitamins A, D, and C, and iron furnished the required calories, minerals, proteins and vitamins. And they suggested that the present practice of supplementing complex carbohydrates in the first and second months induced added burdens to the gastro-intestinal tract, to the kidneys and to the behavior of the infant; burdens which could lead to complications in physiology and psychology.

We found the report worthy of thoughtful study and conscientious reflection.

Outstanding Health Authorities To Address Columbia Pharmacy Bicentennial Conference

Outstanding authorities in medical research, medical economics, public health and medical and pharmaceutical education have accepted invitations to address the Bicentennial Conference of the Columbia University College of Pharmacy, it was announced today by George W. Merck, president of Merck & Co., Inc., and chairman of the national committee in charge of the two-day scientific congress.

Designed to celebrate the 200th anniversary of the University and the 125th of the College of Pharmacy, the conference will be held at McMillin Academic Theater, on the University campus at 116th Street and Broadway, New York City, on October 14 and 15. The sessions will be open to the public, as well as to physicians, pharmacists, dentists, nurses and other members of the health professions. They will start each day at 10:00 A. M. and end at 4:30 P. M.

The speakers at the morning session on October 14 together with their topics will be Dr. Henry Welch, Director of the Antibiotics Division, U. S. Department of Health, Education, and Welfare, "Chemotherapy in Infectious Diseases;" Dr. Cornelius P. Rhoads, Director of Memorial Hospital and Sloan-Kettering Institute for Cancer Research in New York City, "Pharmacy's Challenge in the Problem of Cancer;" Dr. William H. Sebrell, Jr., Director of the National Institutes of Health, Bethesda, Md., "The Role of Drugs in Nutrition."

Those who will address the afternoon session on this date, and their subjects, are Dr. Nathan S. Kline, of Rockland State Hospital, Orangeburg, N. Y., "The Pharmaceutical Approach to Mental Diseases;" Dr. Wilbur W. Swingle, Conklin Professor of Biology, Princeton University, "Widening Horizons in Endocrine Therapy;" and Dr. John C. Krantz, Jr.,

Professor of Pharmacology, University of Maryland College of Medicine, "Cardiac Drugs and the Aging Problem."

The morning session of October 15 will hear Dr. Louis I. Dublin, the noted consultant on health and welfare, on "Pharmacy's Impact on the Economics of Health;" George Bugbee, president of the Health Information Foundation, on "The Greater Economy of Today's Health;" and Dr. Lloyd C. Miller, chairman of the Revision Committee, United States Pharmacopeia, on "Safeguarding Your Health."

The afternoon session of October 15 will hear Dr. George D. Beal, Associate Director of the Mellon Institute, Pittsburgh, on "The Pharmacist Serves with Many Hands;" Newell Stewart, Executive Vice President of the National Pharmaceutical Council, on "The Community's Health Information Center, The Pharmacy;" and Dr. W. Paul Briggs, Executive Director of the American Foundation for Pharmaceutical Education, on "The Greater Role of Pharmacy in the Future of Public Health."

For those attending the conference, luncheon will be served for a nominal fee at nearby Riverside Church.

Commenting on the program of the two-day scientific congress, Dr. John N. McDonnell, Vice President of Schering Corporation and Co-Chairman of the Program Committee, declared that the conference will be the first of its kind to be devoted to a practical review of man's present health and welfare from the scientific, social and economic points of view.

"The sessions," he pointed out, "will place particular emphasis on the many advances that have been made in recent years in the treatment of cancer, heart

Continued on page 260

REPORT OF COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

To the Officers and Members of the Maine Medical Association:

The Committee on Medical Education and Hospitals of the Maine Medical Association herewith submits its annual report.

In the notification of appointment by the Secretary this Committee was instructed that its origin stems from Chapter VII, Section 5 of the By-laws, and that its duties shall be:

1. to keep itself constantly informed concerning the relations between physician and hospitals;
2. to be advised on the problems of medical education, with particular attention to opportunities for students in Maine so desiring to obtain a medical education;
3. to be advised of and provide opportunities for postgraduate training for doctors in Maine.

To better instruct ourselves in its affairs we reviewed the comprehensive and most informative reports of the three previous chairmen, Drs. Richard S. Hawkes, Frederick R. Carter and Waldo A. Clapp. These communications all indicate a sincere and very real attempt on the part of these previous committees to conscientiously and constructively survey the problems propounded under the mores of the By-laws and to provide logical solutions to such questions. The present Committee held its annual meeting at the Augusta House, Tuesday, March 23, 1954. All members present except Dr. Maltby who was detained by an emergency. As in the past, the fact of only one stated meeting far from expresses the volume of work, travel and correspondence carried out in an endeavor to accomplish certain objectives.

A. Definition of the duty of this Committee as expressed in item 1 of the By-laws.

It immediately became apparent that all members of this Committee felt that hospital-physician relationships was a delicate subject and one that had to be clearly defined. Certain obvious aspects of such relationships would automatically fall within the province of the Board of Ethics and Discipline or a Grievance Committee. Another facet of such relationship particularly considering the method of compensating radiologists, pathologists and anesthetists, has already been vigorously opposed by the Council on the grounds that such definitions have been explicitly stated by the House of Delegates of the American Medical Association and the American Hospital Association in conjunction with national organizations of the specialties named. In conclusion it was agreed that until otherwise instructed, this Committee would hold itself ready to review, consult or advise on any problem arising in the field of physician-hospital relationship to which its attention might properly be drawn or in which it might be invited to participate.

B. Postgraduate training for doctors in Maine.

The Committee devoted the major part of its time and thought to this difficult problem and arrived at few concrete conclusions. The Committee respectfully calls to the attention of the Association the "Preview of the Principal Findings of the American Medical Association Survey of Postgraduate Medical Education" (J. A. M. A., p. 389, May 22, 1954) and the excellent article on this subject by Dr. Laurence B. Ellis in the New England Journal of Medicine for February 11, 1954, p. 243. To quote from the latter "The continuing professional education of practicing physicians constitutes one of the most important, difficult and neglected problems facing American medicine today.—The problem of providing adequate opportunities for postgraduate medical education for the physician in rural practice,—often isolated and divorced from contact with teaching centers or even fellow physicians, cannot be solved without full cooperation of the doctor himself."

In the first place, let it be said that we are painfully aware that never in the history of the world have there been so many people concerned with the improvement of the few. Voluntary health agencies, social workers, planners, reformers and professional educators all seem dedicated to improving educational opportunities for someone else, and one cannot always be sure that the seemingly uncoöperative attitude of the heathen is not more than simple passive resistance.

We are equally cognizant of the difficulty if not actual impracticability, of many physicians in remote rural areas being able to leave their practice for more than a few hours or a day at the most, without a greatly increased reservoir of manpower or funds to aid them in such absenteeism.

The Committee feels that the Annual Fall Clinical Session is a splendid attempt at solving the problem of postgraduate education for the physicians of the State of Maine, and express deep regret that so few physicians avail themselves of this opportunity. Excellent speakers present papers of national meeting caliber, on subjects of general interest. The aims, methods employed, the content, time, place, facilities, faculty and method of administration have been carefully considered and developed. The sincere appreciation of the Association should be expressed to those responsible for this outstanding achievement.

Thinking in terms of further self improvement and extracting suggestions from the experience of other medical societies in which the membership is widely dispersed throughout essentially rural areas the following suggestions are recommended to your attention:

1. Purely as a matter of geographical convenience within our state, the addition of two or three mid-winter sectional meetings such as might be held at points in the north, east and southerly sections of the state. These might be patterned exactly after the Fall Clinical Sessions and minimized to one day. Conceivably, they might be correlated in such a way that the same panel of speakers might participate in the various sectional meetings. The emphasis should still be on outside speakers presenting material of a general nature, unless specific regional requests should dictate otherwise.
2. Perhaps the nearest approach to reality rests in a "circuit riding panel" of two or three men provided from a central speakers bureau of the Association, who fortnightly or once a month might visit small groups of physicians in more remote districts, providing practical clinical talks on various pertinent subjects, or presenting material requested. Such teams have been known to cover as many as four contiguous areas in a two-day jaunt, and over a nine-month period have reasonably reviewed modern advances in medicine, surgery and obstetrics.
3. Short courses or teaching clinics varying from one-half to two days are frequently offered by various major teaching hospitals in the state but in general, these are poorly attended. This is unfortunate as they constitute one of the easiest, least expensive and least time consuming forms of postgraduate education. In our opinion one of the principal reasons for lack of physician response to such opportunities is the failure to adequately publicize such courses. It is suggested that space be set aside in the JOURNAL to prominently list all such postgraduate opportunities and that this Committee or the Editors of the JOURNAL use every device possible to elicit such information from Chiefs-of-Staff, Committees on Education and Administrators of the various hospitals about the state.
4. As an exercise in self analysis and to assess the real desire of the members of the Maine Medical Association for any form of continuing education, this Committee plans to circularize a questionnaire during this summer. The value of this and the validity of any information provided rests squarely on the cooperation and participation of every member of the Association. We beg your indulgence.
5. This Committee earnestly recommends the establishment of a Speakers Bureau, at the central office of the Association. Such a group to be composed essentially of members of the Maine Medical Association who on invitation, can and will devote time toward the dissemination of basic medical knowledge or to improve public relations of physicians and the Maine Medical Association in particular.
6. Recognizing the Grange as one of the most powerful influences for good in the lives of the citizens of this

state and knowing the national reputation and concern of this organization in providing better medical care in rural areas, we recommend that — possibly through a central committee,—an attempt be made to explore fields of mutual coöperation, particularly in the area of public education concerning matters of health.

C. Opportunities for Maine students in medical education.

As an addendum to the painstaking and forthright fact finding of the previous committees, the current situation is not materially improved but there now exists in law a tool which if properly shaped and tempered may be the eventual salvation of providing a medical education for our qualified students.

After personal communication with the deans of medical schools in New England and a perusal of the current analysis of the national situation relative to the production and distribution of doctors as set forth by the Council on Medical Education and Hospitals of the American Medical Association, we are forced to the following conclusions.

1. There is ample and equal opportunity for students from the State of Maine to enter any medical school in New England. Of the 1,000 students graduating from our four colleges this year, 40 are expected to enter medical school this fall. This is below the national average. Politicians to the contrary notwithstanding, it is the consensus of medical educators that an ample number of physicians for New England service can be trained in the existing New England medical schools if students can be prepared to meet the exacting and rigid standards for admission and if funds can be provided to maintain them.
2. In general one of the most serious handicaps rests in the fact that graduates from our colleges tend to fall into a percentile of academic attainment somewhat below that presented by competing students from other institutions and areas.
3. Unless an aspiring student has personal funds to see him through the most costly educational discipline in the United States, there are only very limited funds available to him.
 - a. It has been established that the funds of the Bingham Associates are not for training undergraduate medical students.
 - b. The expenditure of the interest of the Garcelon-Merritt Fund is restricted by law and custom.
 - c. The Beatrice Davis Trust held by the Canal National Bank of Portland, may pay out a certain share of its funds to three men engaged in the study of medicine but the requirements are so stringent that to many they become prohibitive.
 - d. A scattering of small supporting scholarships are available from time to time but none are adequate for tuition and maintenance.
- D. A new law to furnish additional educational opportunities to qualified students who are residents of this state.

Of recent years there has been much talk about a medical school in Maine, or possibly a joint medical school supported by the northern New England States. Much as we would like to assume a place in the sun, it seems highly unrealistic to expect our Legislature to appropriate a capital sum of between seven and ten million dollars and an annual subsidy of 500,000 dollars to establish and maintain a medical school in this state, while an entirely feasible and infinitely less costly alternative exists.

Largely through the unfailing energy and interest of our Executive Secretary, W. Mayo Payson, The Ninety-Sixth

Legislature laid the foundation for what should be the most logical and realistic means of providing funds to support deserving and eligible Maine students in medical school. Senator Broggi, of York, Dr. Hauck, Dr. Bixler, Dr. Coles and Representative Roundy appeared for the bill L.D. #1341 which passed and became Chapter 122, P. & S. It is reproduced here in its entirety:

"AN ACT Permitting the University of Maine to Provide Additional Educational Opportunities.

Be it enacted by the People of the State of Maine, as follows:

Sec. 1. *Educational contracts by trustees.* The trustees of the University of Maine are hereby authorized to enter into contracts with other colleges and universities in other states and with private institutions of higher education within this state for the purpose of furnishing additional educational opportunities to any qualified student who is a resident of this state, in fields of study not provided for in the curricula of the university, and for the further purpose of furnishing such educational opportunities to similarly qualified students of colleges and universities in other states and private institutions of higher education within this state. Such contracts shall be approved by the governor and council, for a term not exceeding 2 years and within available appropriations. No student shall receive assistance for a period exceeding 4 years under the provisions of this act.

Sec. 2. *Appropriation.* There is hereby appropriated from the general fund for the purposes of this act the sum of \$5,000 for the fiscal year ending June 30, 1955, to be paid to the trustees of the University of Maine. The trustees shall keep said moneys in a separate fund and shall account for their expenditure to the governor and council annually on June 30. Said appropriation shall not lapse, and any balance remaining in the fund at the end of any fiscal year shall be available for the following year."

From the above one will immediately see that the context of the law is not primarily or necessarily for the support of medical students. It should also be noted that the Legislature failed to vote any implimentary appropriation last year. A personal communication from Governor Burton M. Cross documents the fact that the President of the University of Maine is his nominee to the Tri-State Committee on Education, and it is implicit that he is also the executive officer for the Trustees of the University of Maine. A communication from President Hauck indicates his enthusiasm for the exchange student plan in general and in particular his earnest desire to coöperate with The Maine Medical Association in every way possible to train more physicians for service in this state.

It then becomes apparent that if the Maine Medical Association is seriously interested in training more doctors for the practice of medicine in this state at the lowest possible cost, the Association will bend its every effort to support and provide assistance and information to those responsible for reporting appropriations at the next Legislative session.

Respectfully submitted,

GEORGE L. MALTBY, M. D.,
MILAN CHAPIN, M. D.,
JOHN R. LINCOLN, M. D.,
RICHARD C. WADSWORTH, M. D.,
CHARLES F. BRANCH, M. D.,
Chairman.

(Presented at the 1954 Annual Meeting of the M. M. A. House of Delegates.)

Dramamine's® Effect in Vertigo

Dramamine has become accepted in the control of a variety of clinical conditions characterized by vertigo and is recognized as a standard for the management of motion sickness.

Vertigo, according to Swartout, is primarily due* to a disturbance of those organs of the body that are responsible for body balance. When the posture of the head is changed, the gelatinous substance in the semi-circular canals begins to flow. This flow initiates neural impulses which are transmitted to the vestibular nuclei. From this point impulses are sent to different parts of the body to cause the symptom complex of vertigo.

Some impulses reach the eye muscles and cause nystagmus; some reach the cerebellum and skeletal muscles and righting of the head results; others activate the emetic center to result in nausea, while still others reach the cerebrum making the person aware of his disturbed equilibrium. *Vertigo may be caused by a disease or abnormal stimuli of any of these tissues involved in the transmission of the vertigo impulse, including the cerebellum and the end organs.*

A possible explanation of Dramamine's action is that it depresses the overstimulated labyrinthine structure of the inner ear. Depression, therefore, takes place at the point at which these impulses, causing vertigo, nausea and similar disturbances, originate. Some investigators have suggested that Dramamine may have an additional sedative effect on the central nervous system.

Repeated clinical studies have established Dramamine as valuable in the control of the symptoms of Ménière's syndrome, the nausea and vomiting of pregnancy, radiation sickness, hypertension vertigo, the vertigo of fenestration procedures, labyrinthitis and vestibular dysfunction associated with antibiotic therapy, as well as in motion sickness.

Any of these conditions in which Dramamine is effective may be classed as "disease or abnormal stimuli"* of the tissues including the end organs (gastrointestinal tract, eyes) and their nerve pathways to the labyrinth.

Dramamine (brand of dimenhydrinate) is supplied in tablets of 50 mg. and liquid (12.5 mg. in each 4 cc.). It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.



The site of Dramamine's action is probably in the labyrinthine structure.

*Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP 8:35 (Nov.) 1953.

COUNTY SOCIETIES

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Secretary, Pauline G. Starks, M. D., Lewiston

Aroostook

President, John R. Osborne, M. D., Houlton
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Secretary, C. W. Kinghorn, M. D., Kittery

NEWS AND NOTES

Somerset

A meeting of the Somerset County Medical Society was held at Lakewood, August 10, 1954. The following officers were elected for the coming year:

President, William B. Grow, M. D., Fairfield.

Vice-President, Richard P. Laney, M. D., Skowhegan.

Secretary-Treasurer, Harland G. Turner, M. D., Norridgewock.

Delegate to the Maine Medical Association, George E. Sullivan, M. D., Bingham. Alternate, Howard L. Reed, M. D., Skowhegan.

Board of Censors: Harland G. Turner, M. D., H. Carl Amrein, M. D., Madison, and Maurice E. Lord, M. D., Skowhegan.

Program Committee: Harland G. Turner, M. D., George E. Young, M. D., and Richard P. Laney, M. D.

HARLAND G. TURNER, M. D.,
Secretary.

Health Authorities to Address Conference

Continued from page 256

disease, mental disorders and the infectious diseases, but they will also stress the relationship between these advances and such important contemporary phenomena as the lowering of the death rate, the prolonging of life, the decrease in the incidence of disease and the shortening of the period of convalescence after illness."

Dr. McDonnell added that the problems of nutrition, old age and degenerative diseases will also be considered, especially since many new drugs have been discovered in recent years that have extended man's life span more than a quarter of a century.

Among the many industrial, civic and educational leaders serving on the national committee with Mr. Merck are Eugene N. Beesley, President of Eli Lilly and Company; Dr. William A. Feirer, Executive Vice President of E. R. Squibb and Sons; Dr. E. E. Leuallen, Dean of the Columbia University College of Pharmacy; Dr. Ernest H. Volwiler, President of Abbott Laboratories; and Myron Walker, President of Walker Laboratories and Chairman of the Board of Trustees of the Columbia University College of Pharmacy.

EDITOR'S NOTE: The Conference as outlined with a group of especially qualified speakers holds out opportunities which we thought our readers should know about. With the appearance of new drugs so rapidly, it is important for the practicing physician to follow their developments. This conference offers the very best program along general lines which we have received in this office for a long time.

TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

Bed Rest in the Treatment of Pulmonary Tuberculosis

A Twenty-Year Follow-Up Study of 377 Patients

By Albert I. DeFriez, M. D., William E. Patton, M. D.,
Edward J. Welch, M. D., and Theodore L. Badger, M. D.,
The New England Journal of Medicine, January 14, 1954.

Recent advances in the treatment of pulmonary tuberculosis warrant a critical review of the place of bed rest in the treatment of this disease. Bed rest, of varying character and duration, has been the cornerstone of treatment for many years. New drugs and improved surgical technics have made a strict evaluation of the older methods of treatment necessary in order to have a therapeutic baseline by which the newer procedures may be judged. Today the treatment of even minimal tuberculosis without chemotherapy is unusual so the effects of bed rest *per se* can be determined only by a retrospective study such as this.

Since 1930 the Channing Home (Boston) has used strict bed rest as the basis of treatment, with additional forms of therapy as indicated. There has always been a conflict of attitudes toward the treatment of the tuberculous patient, necessitating a compromise between the maximum amount of rest needed by those acutely and chronically ill and the physiologic benefits of exercise for the normal body. This conflict still prevails and probably accounts for the wide variations in the regimens of rest advised.

The records of all patients admitted to the Channing Home for Tuberculosis from 1930 through 1944 were reviewed for this study. This institution is a 29-bed voluntary hospital founded in 1857 for the treatment of chronic disease in women. Since 1900, however, only patients with pulmonary tuberculosis have been admitted, and they, with few exceptions, are placed on strict bed rest. When clinical signs of active disease are absent, when the sputum is converted and serial X-ray films show no change, bathroom privileges are allowed, then increasing activities. Eight weeks before discharge, patients are placed on exercise increasing by daily increments of five minutes, until, having reached four hours a day out of bed, they are discharged to continue treatment under the care of their physician at home.

All X-ray examinations of the lungs were reviewed, but those taken at the time of admission, six weeks later, four months after admission and at discharge were regarded as an index of progress for the study. These were evaluated in retrospect by a panel of three or more staff members. Following discharge chest films taken in the period up to five, six to ten, 11 to 15 and 16 to 20 years were compared to evaluate the patient's subsequent progress.

The incidence of relapse or progression of disease under sanatorium treatment and of relapse after discharge was selected as an index of the success or failure of treatment. No attempt was made to differentiate a "relapse" from a "progression." The few patients who signed out against advice did not significantly affect the results. Patients (53 of the 377 studied) who were granted bathroom privileges on admission had small lesions and were afebrile. Statistical analysis of this group revealed that it was justifiable to consider them with the main group of patients. During the period of this study 434 patients were admitted to the institution. Seven of these were never proved to have had active tuberculosis, 16 were transients and 34 were readmissions and were evaluated only on the basis of their original admission.

A total of 377 cases thus became available for study. Of these, 156 were transferred from the Channing Home to other sanatoriums. This group was included because, on review, it was apparent that their relapse rate did not differ significantly from that of the 221 patients who remained at the Channing Home during their treatment. Follow-up data and statistical analyses were based on the total hospitalization of 377 patients. The median age of the patient population was

28.3 years. The average hospital stay for all cases was 15.4 months. Patients given thoracoplasty and pneumothorax had a long period of hospitalization (a mean of 22.5 months and 18 months respectively) probably because at the time of admission they had sufficiently acute or advanced disease to warrant extended bed rest before surgery.

Advanced disease accounted for 76 per cent of all admissions while 16 per cent were classified as having minimal disease. The remaining eight per cent were patients whose chest films could not be classified for a variety of reasons.

All living patients were followed for a minimum of five to a maximum of 20 years; 58 per cent were alive at the end of the follow-up period, and 23 per cent had died of tuberculosis. The term "relapse" is used to designate any patient who showed a progression of disease after leaving the institution, whatever the interval after discharge. There was a high mortality from tuberculosis among those who relapsed. Of 95 patients who relapsed 31 per cent finally recovered, and six per cent died of causes other than tuberculosis. The others are dead of tuberculosis, have relapsed again or are still on restricted activity.

The highest annual relapse rate occurred during sanatorium treatment due to the 48 patients, many of them severely ill when admitted, who died in the institution. The "cumulative relapse rate" reveals that, of 100 persons, 50 had either progressed in the sanatorium or relapsed after discharge by the end of 20 years. The cumulative relapse rate corrected for the 48 patients who died in the institution is 42 per cent for the 20-year period.

No matter what the stage of the tuberculosis was or what treatment applied, the cumulative relapse rate is high. The 20-year cumulative relapse rate is 33 per cent for patients treated with strict bed rest plus thoracoplasty, 39 per cent for patients with minimal tuberculosis treated with strict bed rest and 54 per cent for patients with moderate disease treated with strict bed rest. The relapse rate for advanced tuberculosis treated by every available means was 56 per cent.

Bed rest must be considered a specific form of therapy along with other procedures such as pneumothorax, chemotherapy and definitive surgical technics. In this study specific treatments are hardly comparable with each other on a strictly statistical basis; but in all forms of therapy there is reason to be dissatisfied with the subsequent high rate of relapse. A recent evaluation of modified bed rest in minimal tuberculosis, showed that the younger the patients, the more newly acquired the disease and the greater its extent, the more likely it was to relapse over a period of time. The present study indicates that *strict bed rest* was no more dependable than *modified rest* as treatment for minimal tuberculosis. It seems preferable to utilize both chemotherapy and occasionally surgery, in addition to bed rest in minimal disease that is so unpredictable and so prone to relapse.

The real effect of bed rest is still unknown, yet its value in active stages of tuberculosis remains widely accepted. It may be possible to shorten the period of bed-rest when used with anti-tuberculous drugs. Greater emphasis on indoctrination of the patient will be necessary, and rehabilitation will be begun early in the long-term chemotherapy. Meanwhile, while new therapies are being explored, bed rest should remain the starting point of management. Finally it should be noted that the unequivocal value of anti-tuberculous drugs makes treatment of active tuberculosis by bed rest alone hardly justifiable. The problem of the future will be to determine how much bed rest, strict or modified, is advisable in addition to drug therapy in the management of each patient.

(The printing of Tuberculosis Abstracts is made possible by the coöperation of your local tuberculosis and health association.)

*From Vol. XXVII, September, 1954, No. 9.

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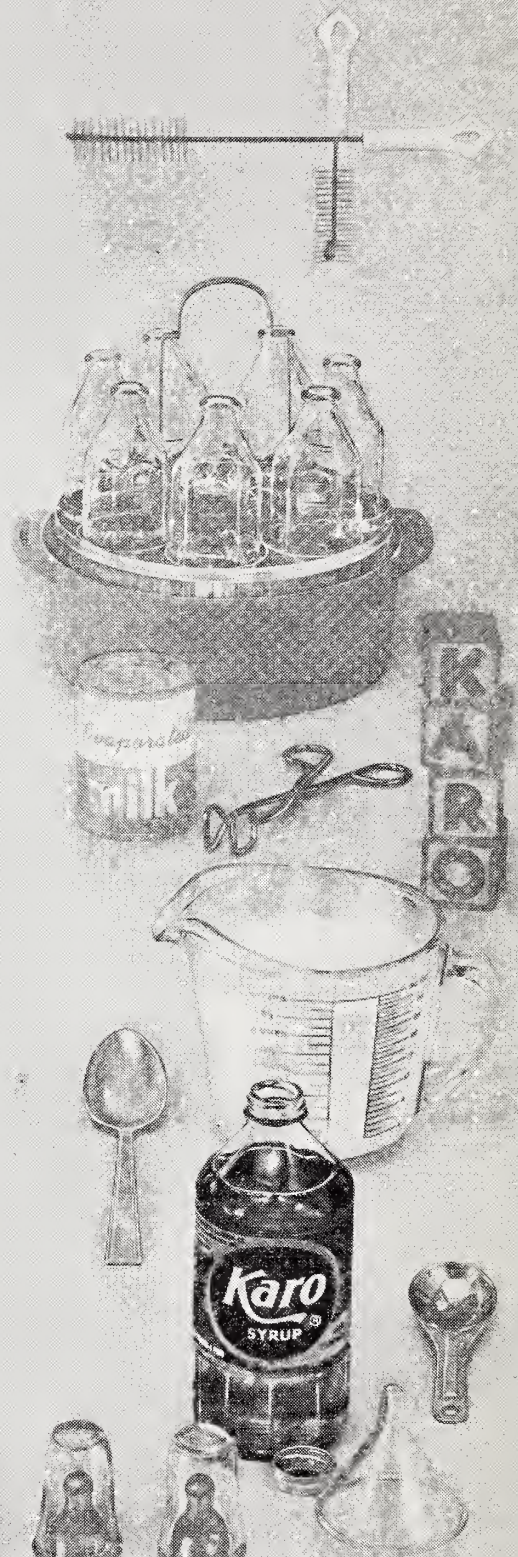
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A TWENTY-FIVE YEAR RETROSPECT OF INFANT FEEDING

ALTON GOLDBLOOM, M. D.*

The apparently simple present-day methods of feeding infants stand out in sharp contrast to the methods practised and the beliefs held a generation or so ago. The reasons why we do or do not do certain things, why we do or do not give certain foods, have changed materially together with our practices. It is by no means uninteresting, nor is it without some measure of indulgent amusement, to look back over the road which we have travelled this past quarter century to see where we have got to and where we have come from; perhaps, too, to try to see ahead a bit to where we are going.

A generation ago, infant feeding was regarded as a high and complex art and by no means a simple one. It required a year or two of study and practice to learn well. One studied pediatrics particularly with a view to learning infant feeding. It was the key to a successful pediatric practice. I remember a distinguished pediatrician of the United States who had at the top of his letterhead the words "Practice Limited to Infant Feeding;" and he was a busy man. If you were a young and ambitious doctor and wanted to be a pediatrician, you chose the school of infant feeding which you thought was the most advanced, and you went there to learn the method. You went to Boston to learn "percentage feeding," while another went somewhere else to learn "caloric feeding." It was the "method" of feeding that was most important. What was behind the method was the desire on the part of all pediatricians of the day to try so to modify cow's

milk by dilution and by the addition of sugar, etc., as to make it resemble human milk in its composition; the reason being, of course, that if you could produce a reasonable facsimile of human milk, you would then have no trouble in feeding infants. All the efforts of those interested in the subject were directed towards producing an imitation of human milk. Today our aim is to provide an infant with adequate food on which it can thrive, without regard to the manner in which it may differ from human milk.

The appalling mortality of artificially fed infants in those days, and the manifest failure of all the divergent methods of feeding, made it necessary to have always on hand a fairly large supply of human milk in hospital feeding and, in homes where they could be afforded, wet-nurses for those infants who were very ill. New York and other large cities had wet-nurse directories, some maintained privately, like employment agencies, others by public charity organizations. Hospitals for children often kept as many as half-a-dozen wet-nurses, their infants admitted as "feeding cases" to the "feeding ward" as it was called; the wet-nurses were assigned to do light work and to pump or strip their breasts several times a day. This was thought to be better than the method of supplying district nurses to collect breast-milk from mothers who lived at home, nursed their babies, and sold the excess to the hospital at from four to six cents an ounce. The method was highly developed in Boston where at the Floating Hospital the "milk maids" would meet the boat when it docked in the late afternoon, each heavily-laden with the day's tak-

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ings; bottles upon bottles of milk gathered from dozens of nursing mothers in the district. The trouble was that these mothers, who were selling their precious milk at a price for the sake of saving the lives of poor sick children in the hospital, were not above adulterating this milk, either by the old-fashioned method of adding water to it, or by the simple expedient of mixing it with cow's milk. These frauds were fortunately detectable by simple methods. The wet-nurse in the hospital had no reason for practising such frauds, because she had her keep, light work and a home for her infant; moreover, she stripped or pumped her breasts under supervision. But she was a nuisance; she felt indispensable, as indeed she often was, and acted accordingly. Yet it was a great comfort to the attending physician to know that there were five or six quarts of breast-milk always on ice for use for our more difficult feeding problems. Indeed, many an infant was tided over a most critical period with human milk, when other milk would have failed.

The feeding of all infants in the hospital was directed by the head physician of the ward. No one else dared prescribe or change a formula. The interne merely observed with rapt attention and interest how this clever and omniscient man went about on his rounds changing the formulas according to his judgment. His judgment was based upon the weight, on the presence and nature of vomiting, and on the character of the stools; the last being by far the most important. A distinguished lady pediatrician, then an interne, used to call them "stool rounds." One might call them fecal fascination, or coprophyllic fetishism, or divination by stool. The professor purported to know, by examining the stool of each baby, what was wrong with him and how the food should be changed. And this was a ritual! The stool of each child had to be saved for rounds. They were done up neatly in brown paper folders and "filed" alphabetically. It was the duty of the junior interne to have charge at rounds—right after breakfast—of the basin containing the stool filing system. Of course, he could not stand too close to the professor and his followers; he was obliged to stand at a distance. When the professor approached the bed of an infant, the resident would call out the infant's name; the junior interne would look through his file, get on the desired folder, open it, approach the professor and from his breast pocket respectfully withdraw and present a wooden tongue depressor. The professor would then examine the stool, far more carefully than he ever examined a baby. He would comment on it, smear it back and forth with the spatula, smell it, and often deliver a short lecture on its characteristics. How we would marvel when the professor guessed, from the appearance of the stool, what food the baby was getting. "Dextri-Maltose" he would say. Some one would look at the chart, and Dextri-Maltose it was! "Protein

milk" he would say—again he was right. A great man indeed! Then would come the great moment when the formula was changed. "Add $\frac{1}{4}$ per cent of fat, take out $\frac{1}{2}$ per cent of sugar, and split the proteins." The orders were carefully noted, and it was the duty of the junior interne to figure out the formula from a prescription that went something like this: "2—6.50—1.50—30 x 7" which meant that a mixture was to be ordered that would contain 2 per cent of fat, 6.5 per cent of sugar (which was always lactose unless otherwise specified) and 1.5 per cent of protein. There was to be 30 oz. of this, and it was to be divided into seven feedings. The sugar was always lactose, because that was the sugar present in human milk. We often smiled indulgently when we found a sick infant whose mother or whose doctor had been foolish enough to give him granulated sugar — no wonder the child was ill. The idea about sugar changed when the price of lactose went so high during the first world war that most people could not afford it. It was the late Dr. Howland, then professor of pediatrics at Johns Hopkins, who showed that cane sugar did just as well as any other sugar and was of course much cheaper.

Splitting the proteins was an undertaking in these days, about as arduous as splitting an atom. It meant that the whey proteins and curd proteins were to be so arranged in the formula as to be of somewhat the same composition as they are found in human milk. When the order "split proteins" was given, it usually specified what percentage of casein and of lactalbumin it was to contain. The poor junior had to indulge in mathematical calisthenics in order to arrive at the proper mixture of cream or top milk and whey which would give the desired proportions. Until you caught on you wished Einstein were at your side to help you — eventually it became child's play. Protein was ordered "split" usually because the stool showed a bean curd, which represented a bit of milk curd that had escaped the action of the digestive juices, perhaps on account of its size. Yet its presence meant a fault in the infant's digestion and called for this drastic change.

Bean curd was also the reason for the almost universal use of barley-water for diluting the milk. Any cereal gruel mixed with milk prevented the formation of large tough curds; but barley, "patent barley," was the choice. It was a bit of heresy to use anything else, and "patent barley" sold for close to a dollar a pound, as did oven-browned ordinary wheat flour which, under a trade name, threatened to swamp the popularity of "patent barley." It resulted, therefore, in a great saving in money when, at the Babies Hospital in New York, the late and great Dr. L. Emmett Holt used ordinary wheat flour, either browned or natural, for making gruels for formulas. Dr. Holt was a scientific man, and he ordered the change only after he had demonstrated to the satisfaction of everyone

that the gruel made from flour was as well digested as barley flour, and that it was equally effective in preventing bean curds from appearing in the stools. Boiled milk which also prevented bean curds was not as good for babies as raw milk, so that was not a way out of the difficulty.

Controversies raged over whether one should give high-fat or low-fat feedings. After all, if we were to follow the composition of human milk, we must feed 3 to 4 per cent of fat, but unfortunately this was rarely tolerated by many infants already debilitated by malnutrition. You were either a high-fat feeder or a low-fat feeder, and you either hated your opponent heartily or you had a sympathetic tolerance toward your poor misguided friend. There were feuds, and hot ones too, over whether one should use top-milk or whole milk in making up a formula. Top-milk formulas were difficult to understand; whey and curd formulas (split protein) were even more complicated. Neither were eminently successful, particularly with sick infants, and their popularity was short-lived.

There were a number of flagrant contradictions which were regularly practised in those days and which we, of the then younger generation, were quick to observe and query. The infant was unable to tolerate more than a certain percentage of fat, say 2, 3 or 4 per cent, depending upon whether you were a high-fat feeder or a low-fat feeder; but you always gave the baby three teaspoonfuls of cod liver oil, and often a teaspoonful of olive oil if he was constipated; yet this half ounce of pure 100 per cent fat never seemed to bother either the high-fat feeder or the low-fat feeder — this was medicine and didn't count. Another contradiction was the following: While all milk had to be diluted and modified for infants, sour milk could be given without dilution. In fact the Dutch method, which was said to have been a very old folk-method, consisted of sour milk to which, of all things, cane sugar was added, and it worked. This benefit was supposed to be due to the lactic-acid bacilli of the sour milk. In some vague way they made the food digestible by altering the intestinal bacteria. Whatever the reason, whole lactic-acid milk with added sugar was a refuge when the standard methods and all other methods failed.

Milk had to be given raw. Not even pasteurization was good enough for formulas. Although Jacoby in the latter part of the last century was the first to advocate boiled milk for infants, and experience had many times demonstrated the greater tolerance of infants for boiled milk, the reasons for insisting on raw milk were that by boiling the milk the vitamins were destroyed and the enzymes were killed. What enzymes no one has ever yet learned, or of what importance they were to the infant; yet the enzymes were destroyed and milk must be given raw. This led to the development of "certified milk" — that is, milk from

tested herds and produced under such conditions that the bacterial count was so low that it was safe to give to infants. This milk was twenty-five cents a quart, so that the benefits were for the rich only. The poor had to get along as best they could with pasteurized milk.

When I began to practise I was several times called to see children suffering from abdominal tuberculosis. The story was invariably the same; the child had been doing poorly—the doctor advised milk fresh from the cow. The people moved to the suburbs, and bought a cow whose milk was given fresh to the infant. Often such cows were tuberculous, and the unfortunate infants became infected. Such experiences were sufficient to convince a young pediatrician of the value of sterile milk for the feeding of infants.

The amount which the baby was allowed to have at a feeding was carefully controlled by the doctor. The rule was that a child might not have more at a feeding in ounces than his age in months plus one. Thus if he was three months old, he was allowed four ounces at a feeding and no more. The poor infant often was unaware of this rule, so when he cried he had colic. If you gave him more, there was danger of dilating his stomach. Why, infants on the breast who often gorged themselves with seven or eight ounces at a feeding at six or eight weeks didn't die horrible deaths, was quite beyond comprehension! Then the X-ray came along to show that the infant, whatever the capacity of his stomach, passed liquid food along into the duodenum rather quickly. Thus the rule was abandoned.

Our knowledge of vitamins in the second decade of this century was vague and limited. The one best understood was vitamin C, which was called "water-soluble C." All children received orange juice from a fairly early age, and knowledge of other sources of the vitamin was increasing. Tomato juice was found to be effective, but you could obtain this only by draining off the juice from a tin of canned tomatoes. Many mothers objected to this practice, because they abhorred the idea of giving their precious infants anything out of a can. It required some years to eradicate this prejudice.

In my early days of practice in Montreal, the late Dr. A. D. Blackader, who was always extremely generous to young men trained in pediatrics, sent me to see a child who was not thriving. The problem was not a difficult one, and was readily adjusted. The child was not ill, but was having a rather hard time with a formula that contained a lot of cream. I prescribed a simple formula of milk, sugar, and water, on which the child did quite well. I had ordered an ounce of orange juice to be given each morning. In a few days the mother complained that the infant did not tolerate the orange juice. I asked her to drain off the juice from a tin of tomatoes and give the child about two ounces of this each day. The poor mother

was horrified at the idea of giving her baby anything out of a can, but my success in solving the feeding problem made it easy to convince her that this practice was both safe and beneficial. She reported to me in a few days that the infant was doing nicely and that the tomato juice was being well tolerated.

For several months thereafter I was obliged to defend myself against the attacks of dowagers who had "never heard of such a thing." The story of myself and the tin of tomatoes kept coming back to me in many garbled forms. The final version of these apocrypha went something as follows: A baby was very ill and all the doctors had given it up. Nothing more could be done for it. Then up spoke one of the doctors and said "There is a young baby doctor in Montreal recently arrived from New York. Perhaps you might try him." I was accordingly called. I entered the house, took one look at the dying baby and cried "Open a tin of tomatoes. Quick!" The tin of tomatoes was opened, the juice was given to the baby and the baby recovered!

Cod liver oil was given to prevent and cure rickets, but one was never sure whether it was something in the fish liver oil, or just any oil, which had the beneficial effect. Many schools held the view that any oil would do provided it contained phosphorus. In one hospital the clinic patients received as cod liver oil, a bottle of cotton seed oil to which was added a drop of oil of phosphorus. It was about in 1920 that it became to be fairly generally accepted that there was something in cod liver oil that many other oils did not possess, that had an effect in the prevention and cure of rickets. There soon followed the discovery of the effect of irradiation on rickets, then of the possibility of irradiating ergosterol; and finally the relationship between fish oils, irradiated substances, sunlight, etc., to the prevention and cure of rickets.

It gradually became evident that for an infant to do well, its food must be sterile, because many of its ills were due to bacterial diseases caused by raw milk. Boiled milk for infants had been advocated in the middle of the last century by Abraham Jacoby, in his time the leading authority on pediatrics in North America; but his views on this matter were never adopted in his lifetime. At the time of his death the controversy was still raging between the advocates of raw certified, "grade A" pasteurized, and boiled milk. The late Dr. Howland settled this question without great difficulty. The practice in his clinic was to give the necessary amount of food as boiled milk and cane sugar. It worked much better than raw milk formulas, and that was that. One of his pupils, the late W. McKim Marriott, was a man of great brilliance and resourcefulness. It was he who popularized the use of corn syrup as a cheap and useful sugar for the infant's formula. It was he, too, who was largely responsible for the wide use of evaporated milk. Evaporated milk with two parts of water and an ounce of

corn syrup for every twenty ounces of total mixture, acidified with about a teaspoonful of lactic acid, made, he taught, an ideal food mixture for an infant, and did not require "changing of the formula." The lactic acid was added because he felt that part of the infant's digestive problems were due to the fact that cow's milk had the property of using up a good deal of the acid secretions of the stomach, so that when the acid was neutralized by the milk there was not enough secreted to permit normal digestion.

The addition of an acid to milk was a new idea. It was based upon the knowledge that infants could tolerate undiluted sour milk better than they did raw or pasteurized milk. This was for many years attributed to the lactic acid bacilli, until some bright mind wondered if the acid itself might not have something to do with it. Accordingly milk was acidified with lactic acid alone to the same degree that it usually becomes acidified through fermentation. This worked. Then others wondered if other acids worked in the same way, which indeed they did. The medical literature of the day was flooded with articles on the acidification of milk with different acids: citric acid, vinegar, hydrochloric acid, lemon and orange juices all called forth contributions to medical journals. In this period we learned that boiled milk was better than raw milk, that sour milk was as well tolerated as any milk, that evaporated milk was safe, chiefly because it was sterile; and that any sugar could be added to the formula, provided sufficient of it was given, and that the cheapest sugar was therefore the best.

Two other principles had gradually come to be understood in this period of progress toward simplicity. The one was that the infant must receive "enough" food: approximately two ounces of milk per pound of body weight for every twenty-four hours, with about an ounce of any sugar for every twenty ounces of the mixture, and water sufficient to make the total fluid intake three ounces per pound of body weight per day, more or less. This means very simply that an infant requires two-thirds boiled milk and one-third boiled water; or if evaporated milk is used, it is one-third evaporated milk and two-thirds boiled water, with sugars as already indicated. The whole divided into the number of feedings that the child takes, usually five, occasionally only four or even three.

The other principle was that the vitamins, particularly D and C, must be provided in adequate amounts from a very early age — a few days really — and throughout the first two years of life. From whatever source, an amount of vitamin must be given which will provide the infant each day with about 1000 units of vitamin D and sufficient fruit juice to yield between 30 and 50 mg. of vitamin C. This means an ounce or two of orange juice, or two or three ounces of tomato juice, or the pure vitamin in the doses mentioned.

With these three principles always in mind—sterility, adequacy, and vitamins—the methods used in attaining these ends are of no importance. The goal is important; the manner of arriving at it is of less significance.

Present trends in infant feeding are all towards simplicity. Formulas which used to be changed by the doctor about once a week are now hardly changed at all. Spoon feeding with semi-solids, once withheld until the second half of the first year, are now given as early as six or eight weeks, rarely later than three months, and the variety of foods offered is limited only by the ingenuity and daring of the physician. These are steps in the right direction, and they are in the main responsible for the increasingly diminishing

death rate among young infants, and for the generally improved nutritional state of artificially-fed infants virtually everywhere in the civilized world.

We have come a long way from the empiricism of a generation ago, and we are approaching the scientific attitude of inquiring into the reason for all that we do in infant feeding. We have ironed out most of our difficulties, and we have finally relegated the whole subject of infant feeding to its proper place in pediatrics. We are left with the never-ending task of studying and attempting to understand and, when possible, to cure the manifold and complex diseases of infancy and childhood. From baby-feeders we are gradually becoming physicians for children — or pediatricians.

INCIDENCE OF SEGMENTAL OCCLUSION IN PERIPHERAL ARTERIOSCLEROSIS OBLITERANS

RUSSELL G. WILLIAMSON, M. D.*

The recent enthusiasm for a direct surgical attack upon peripheral arterial occlusions has reawakened interest in the segmental accentuation of arteriosclerosis obliterans. Since the early reports of Holden,¹ Wylie² and Julian³ the problem arises of how frequently do patients with peripheral arteriosclerotic disease, severe enough to necessitate major amputations, have an anatomical lesion which would be amendable to direct arterial surgery. Although the tibial vessels have been successfully disobliterated⁴ they are not ordinarily considered surgically restorable. Estimates of the incidence of femoral-popliteal occlusions vary widely and since these lesions, together with aortic-iliac occlusions, are surgically resectable this study was undertaken to further elucidate the incidence of segmental occlusions of the femoral-popliteal artery.

Boyd⁵ in reviewing 453 cases of senile obliterative arteritis found that 52 per cent of these cases had femoral-popliteal occlusions while 48 per cent of these cases had diffuse arteriosclerotic disease. In the course of 61 arteriographic examinations Forty⁶ reported an incidence of 62 per cent femoral-popliteal occlusions and an 11 per cent incidence of tibial arterial occlusions. Both of these reports were based largely on patients with intermittent claudication who were not in imminent danger of low thigh amputations. Professor Rob⁷ has estimated that 66 per cent of the patients with intermittent claudication and gangrene of the toes are anatomically suitable for an artery graft.

Sappington and Fisher⁸ examined all of the major arteries from 22 low thigh amputations performed for gangrene. In this study they found a 32 per cent incidence of popliteal occlusions. All of these cases of popliteal occlusions had one or more tibial arteries occluded also. "The popliteal artery alone never contained an occluding lesion."⁹ Thrombii were found more frequently in the tibial vessels (68 per cent) than in the popliteal artery and there were an average of 2.3 occlusions per an extremity. Pareira, Handler and Blumenthal¹⁰ in assessing the aging process in arteries from low thigh amputations arrived at similar conclusions. In examining 36 amputated legs they found an incidence of 30 per cent popliteal occlusions and 70 per cent tibial arterial occlusions. Wessler and Schlesinger in examining 52 low thigh amputations performed for peripheral arteriosclerosis used a special injection-dissection technique on 46 extremities and dissection technique alone on 6 extremities. They found an incidence of 38 per cent popliteal occlusions, however they state that the principal bottleneck in the arteriosclerotic leg is in the main arteries between the knee and ankle.

Knowledge of the localization of the occlusive process and the limits of arteriography should temper any surgical plan to relieve the symptoms of vascular insufficiency in the arteriosclerotic limb by restoring the integrity of the arterial lumen in the thigh.¹¹

Palma¹² in describing the syndrome of femoral-popliteal artery occlusion in Hunter's canal states that the rest of the arterial system of the leg remains undamaged in patients with this arteriosclerotic occlusion.

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SOURCE OF MATERIAL

From 1943 through 1953, 56 low thigh amputations were performed at this hospital for arterial insufficiency. Of these, 50 extremities have complete pathology reports which are available for review. Although the differential diagnosis of acute ischemia due to embolic occlusion and secondary thrombosis due to arteriosclerosis is often difficult¹³ a definite differentiation could be made in each of these 50 cases. Arteriosclerosis obliterans and its sequelae were the cause of amputation in 41 extremities while iliac or common femoral arterial emboli were the cause of amputation in the remaining nine extremities. Only those 41 extremities from 37 patients which were amputated because of arteriosclerosis obliterans were selected for this study. The popliteal, anterior tibial, posterior tibial and peroneal arteries were carefully dissected and examined in each of these legs. However, no record is available of the length or multiplicity of occlusions in those tibial vessels which were occluded. Those vessels which were described as patent were patent throughout but often showed moderate to marked degrees of stenosis due to atherosclerotic plaques and calcification.

While arteriosclerotic stenosis of major arteries predisposes those vessels to complete occlusions as emphasized by Wylie¹⁴ and Gilfillan¹⁵ the significance of stenotic areas in the tibial vessels is less certain. Stenosis without occlusion in these vessels may serve as a nidus for fresh thrombosis; however, stenosis alone is insufficient to produce gangrene and may be a stimulus to the development of collateral channels.¹⁶

The age and sex distribution of these 37 patients are shown in Table 1. Diabetes mellitus was present in 23 per cent of the males and 45 per cent of the females. The immediate indication for low thigh amputation was gangrene in 38 extremities and uncontrollable rest pain in three extremities.

RESULTS

The incidence of occlusion of each vessel in the lower leg is presented in Table 2. Of the 22 popliteal arteries that were occluded 13 (59 per cent) showed typical segmental occlusions while the remaining nine showed occlusions extending into the bifurcation of the popliteal artery. The nine popliteal non-segmental occlusions also involved occlusion of at least one tibial artery while five had two tibial arteries occluded and one had occlusions of all three tibial arteries.

The 13 segmental popliteal occlusions which represent 32 per cent of the amputated extremities are the vessels which might be amendable to direct surgery. Aortic arteriosclerosis is undoubtedly present in all of these patients;¹⁷ however, the presence of strong femoral pulses in nine patients and a strong external iliac pulse in one patient rules out a significant degree

TABLE 1
AGE AND SEX DISTRIBUTION

Age		Number of Patients	
50 to 59 years		4	
60 to 69 years		19	
70 to 79 years		12	
80 to 89 years		2	
Males	26	Females	11
		Total	37

TABLE 2
INCIDENCE OF OCCLUSIONS

Arteries	No. of Arteries Examined	No. of Arteries Occluded	Per Cent Arteries Occluded
Popliteal	41	22	54
Anterior Tibial	41	15	37
Posterior Tibial	41	14	34
Peroneal	40	5	13

of aortic-iliac stenosis or obstruction in 10 of the 13 patients with segmental occlusions.^{14, 15, 18} The status of the femoral pulses in the three remaining patients is unknown. These 13 segmental occlusions were the only occlusions present in 10 cases while in the three remaining cases one tibial artery was occluded in each. Two of the three extremities amputated for uncontrollable rest pain showed only a segmental popliteal occlusion with patency of all the other major arteries.

SUMMARY

Approximately one-third of all extremities which are amputated for peripheral arteriosclerosis obliterans have a segmental femoral-popliteal occlusion which anatomically is resectable. The tibial arteries in patients with segmental femoral-popliteal occlusions show a very low incidence of occlusion.

The author wishes to express his appreciation to the Department of Pathology of the Maine General Hospital for aid in the preparation of this paper, particularly to Dr. Joseph Porter and Dr. Franklin Ferguson.

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PRINCIPLES OF TREATMENT IN OSTEOMYELITIS*

B. BERNARD KAYE, M. D., Brooklyn, N. Y.

There are three etiological routes in osteomyelitis:

1. Blood stream infection from a distant focus (Endogenous).
2. Direct contamination from without as in compound fractures (Exogenous).
3. Direct extension from adjacent infection.¹¹ Blood stream infections are more virulent and not as well localized.

ACUTE HEMATOGENOUS OSTEOMYELITIS

Acute hematogenous osteomyelitis is primarily a blood stream infection occurring in children. The incidence has decreased markedly in recent years because of the great improvement in general therapy and the development of the antibiotics. Hematogenous infections are most commonly caused by the *Staphylococcus Aureus* in children over two years of age. The bacteria are filtered out of the blood stream to the metaphyses of the long bones.

The clinical picture is that of an acute infection in a child, followed by pain and tenderness on deep pressure over either end of a long bone, and reluctance to use the affected extremity. Absence of temperature and general reaction to infection may be misleading.² Blood culture and marrow puncture study of the metaphyses are of diagnostic help.

Roentgen studies are valueless in the early stages as roentgen changes do not appear until about ten days following the initial symptoms. Negative findings may give a false sense of security. Serial X-ray studies will reveal the degree of infection, development of sequestra as well as the degree of healing.

Treatment:

The therapy of acute hematogenous osteomyelitis has been greatly revolutionized through the use of

penicillin. Establishment of the diagnosis at the earliest possible time is of the utmost importance.

Bacterial cultures and sensitivity tests will determine the antibiotic to be utilized.

An early dose of 50,000 units of penicillin is given intra-muscularly every three hours until the clinical signs have disappeared and the infection is under control. A total dosage of about 3,000,000 units is usually given over a period of about 21 days.¹ In those cases where the organism is resistant to penicillin, other antibiotics are substituted depending on the sensitivity tests.

Antibiotic therapy is supplemented with general supportive measures, that is, blood transfusions, maintenance of the water, electrolyte and protein balance, etc. Immobilization of the affected part in plaster will help arrest the infection, decrease the lymphatic flow, minimize the absorption of toxins, and avoid the possibility of a pathological fracture.

Conservative:

The mortality rate has been greatly reduced by withholding operative drainage of the bone lesion in the acute stage. Surgery should be delayed until the autogenous protective mechanism and barrier have been set up, and the bacteremia has cleared.⁹ Surgical drainage is indicated for lesions that have ruptured out of the confines of the bone and have become localized as a soft tissue abscess.

Small abscesses may be treated by repeated aspiration and penicillin instillation of the cavity, thereby avoiding secondary bacterial invaders.

Since the sequestra may absorb or revascularize under conservative therapy it is desirable to follow the cause of the pathology by serial roentgen studies.

Surgical Treatment:

Trueta favors early surgical incision plus multiple drill holes near the epiphyseal line. Primary closure is supplemented with penicillin therapy.

* Presented at the Clinical Meeting of the Traumatic and Orthopedic Staff, Columbus Hospital, New York, N. Y., October 23, 1953. Dr. Emmett A. Dooley, Director.

CHRONIC OSTEOMYELITIS

Chronic osteomyelitis is a progressive or recurrent infection characterized by necrosis of bone, suppuration with abscess formation, draining sinuses, and regeneration of new bone.

The diagnosis is simple and is usually made on the combined clinical and roentgen findings. It must not be confused with the specific types of osteomyelitis, eosinophilic granuloma, sarcoma, metastatic carcinoma, benign bone tumors, or osteoid osteoma.

Treatment:

The type of therapy depends upon the local and general clinical picture, roentgen findings, cultures, and sensitivity of the bacteria to the various antibiotics.

1. Conservative Therapy with Antibiotics:

(a) Parenteral administration in those cases presenting small areas of patchy demineralization with small cortical defects and areas of periosteal reaction, without sequestrum formation.¹

(b) Local supplementation of parenteral antibiotics with local instillation of one or more antibiotics in surface acting solvents. Scar tissue and sinus tracts are excised to expose the infected bone and allow absorption of the antibiotics. The medullary cavity is curetted or drilled to permit insertion of a T tube.

Detergent Zephyrin Chloride Aqueous Solution 1:1000 (2 c.c.) plus 1 c.c. penicillin (30,000 units) are injected into the T tube every four hours to permit pooling of the solution in the affected part.⁷

30,000 units of Streptokinase and 200,000 units of Streptodornase are dissolved in 20 c.c. of a 1:1000 solution of Aqueous Zephyran Chloride and 250 to 500 mgs. of aureomycin are dissolved in this solution.⁸

2. *Surgical Treatment:*

Surgery has a two-fold purpose;—first, to eradicate the infection by thorough surgical excision of the pathological bone; second, to provide adequate coverage and closure of the wound.

(a) Sequestrectomy and Saucerization:

The scarred cutaneous and deep tissues are excised to expose the underlying osseous structures. Sequestra, granulation tissue are removed without damage to the periosteum or involucrum. All pockets containing granulation tissues are unroofed. Osteotomy is performed extending from normal bone above to normal bone below.

(b) Wound Closure:

There were four plans of treatment prior to the use of primary closure: debridement followed by packing; maggot therapy; Carrel-Dakin, and the Orr Method. These methods resulted in a prolonged period of morbidity and treatment.

Modern treatment calls for early gloving of the wound. The methods advocated at the present time, following sequestrectomy and saucerization, are:

1. Packing with penicillin or aureomycin gauze, followed by the delayed application of a split-thickness skin graft.
2. Primary closure.⁵
3. Relaxing incisions.
4. Primary closure under antibiotic control (penicillin, streptomycin, or aureomycin).³
5. Primary closure with insufflation of sulfathiazole locally and the use of penicillin parenterally.⁶
6. Tubed pedicle muscle flaps.¹²

SUMMARY

Acute hematogenous osteomyelitis is best treated by early and adequate doses of the antibiotics. The latter administered in sufficient concentration will sterilize the blood stream, prevent abscess formation and bone necrosis. Reactivation of the infection may follow inadequate doses or too early discontinuation of the antibiotics.

Chronic osteomyelitis is best treated:

1. Conservatively by the application of enzymatic debridement agents to expedite bone and skin grafting procedures.
2. Surgical debridement of the wound followed by early and adequate wound closure.

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MAINE MEDICAL CENTER

Portland, Maine

As this magazine was going to press Mr. Phillips M. Payson, president of the Maine Medical Center, announced that the contract for construction of the Maine Medical Center's new wing has been awarded to the low bidder, the John A. Volpe Company of Malden, Massachusetts.

The successful bidder contracted to build the structure for an amount slightly in excess of \$2,000,000.

This covers construction only and, in addition, another million dollars must be expended for new equipment and remodeling of existing buildings and for architectural, engineering and property acquisition costs. There were nine bidders including two prominent Maine general contractors.

Payson said that the estimated cost of the new structure is well within the original amount budgeted.



Showing excavation as of September 16, 1954.

He added "Of the \$3,000,000 necessary to complete the Medical Center, approximately \$2,500,000 has been raised. The trustees are proceeding with great confidence in their belief that the balance will be raised before the Medical Center comes into operation."

Excavation work started on the Bramhall Street site on September 2.

Completion of the project in eighteen months will bring together the facilities of Maine General Hospital, the Maine Eye and Ear Infirmary and Children's Hospital, which affiliated with the Maine General Hospital in 1948. This union of hospital services

and employees will concentrate a maximum of health care facilities at minimum duplication, according to Payson. He said in addition it will provide for better medical and nursing educational programs and clinical research facilities.

The Maine Eye and Ear Infirmary and Maine General Hospital will continue to operate independently until the new Medical Center building is ready for use in the spring of 1956. At that time the entire personnel of both institutions will be coordinated to staff the integrated medical center services.

George Bradley, vice president of the Maine Eye

Continued on page 276



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effects

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THE PRESIDENT'S PAGE

The Fall Clinical Session

We have just finished our Fall Clinical Session for 1954. There were approximately 150 members of the Maine Medical Association registered for this meeting and I am sure that those who were fortunate enough, and who took time out from their practice, to attend this meeting, went away with an increased knowledge, particularly of cancer.

It is most discouraging, both for the speakers and for those who arranged the program, to have as small an audience as was present at this Fall Clinical Session. It is true that this Fall, the meeting place was changed, but the men who spoke at this meeting were outstanding in their fields and a better attendance was anticipated.

As you all know, the emphasis on the clinical side of these meetings has been shifted from June to the Fall Session and the June meeting has been turned into more of a social gathering. It is therefore doubly important that the members attend the Fall Session. It is the only meeting sponsored by the Maine Medical Association which gives us all an opportunity to keep abreast with the latest advancements in medicine.

It would be well if the members of the Association would write to the Association's office expressing their thoughts on the type of program they would like for the Fall Clinical Session, and on the meeting place, in order that more of our doctors will attend in the future. If the type of program which has been presented in the past and which was presented this year is not appealing to the members of the Association, then they should express themselves in order that proper arrangements can be made for next year.

WILLIAM F. MAHANEY, M. D.,

President, Maine Medical Association.

The Journal of the Maine Medical Association

THOMAS A. FOSTER, M. D., Portland, Editor

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Clinical Session

The Clinical Session held in Portland this year offered to our members an extraordinary program sponsored by the Maine Cancer Society; an authorized and vigorous branch of the American Cancer Society. Cordial coöperation of the State Cancer Society and the State Medical Association brought about an effective and stimulating presentation of the "Cancer Problem" from many angles. The featured speakers were authorities in various fields; men studiously disciplined in their training; extensively prepared in clinical experiences and thoroughly competent to express themselves.

The newest methods of diagnoses, endoscopic, X-ray, pathological, bio-chemical and physical, were brought before the assemblies. The aggressive sur-

gical approaches made possible by new techniques were explained. And, indeed, the chemo-therapeutic compounds were brilliantly discussed and evaluated as factors in treatment. Team-work by students in chemistry, physics, pharmacology, surgery, medicine, agrology, laboratory research and pathology has accumulated valuable data and has advanced general knowledge of cancer to a point hardly dreamed of five years ago.

We are fortunate in this country and in this State of Maine to be free to assemble in our public meeting places and to hear scholarly men expound on their latest observations independently and freely without fear of restrictions or reprisals. We hope that it will always be that way in the United States.

Maine Trudeau Society

During the Clinical Session when the subject of cancer engaged our attention particularly, another subject and an important one was discussed by a special group. We refer to the subject of Tuberculosis and to the meeting of the Maine branch of the American Trudeau Society.

Under the leadership of Dr. Lester Adams, Superintendent of Western Maine Sanatorium of Greenwood Mountain and President of the Maine Trudeau Society, a stimulating program was presented. Early diagnosis with the X-ray was developed by Dr. Jack Spencer, laboratory diagnosis, by Dr. Irving I. Goodof and a summary of medical aspects by Dr. George W. Wood, III. We are bringing attention to this meeting because we believe that the formation of

the Maine Trudeau Society will awaken a more vigorous association program in the "fight" against the old enemy, T.B., and will encourage general practitioners to support the activities of the Society.

Tuberculosis in many forms continues to attack the young and the old in Maine as it does elsewhere in the country. Bold and successful surgical procedures have widened the avenues of attack. And new chemical compounds have strengthened the classical methods of treatment. With an energetic and alert attitude toward the importance of early diagnosis the profession is able at present to offer the anxious patients a more hopeful prognosis. We wish for the young Trudeau Society a healthy growth into a strong and active body.

Herbert H. Brock, M. D.

Doctor Herbert Henry Brock, who passed away October 4, 1953, at the age of 84, was an active and familiar figure in Portland. He was short, quick, dextrous with his hands, and handicapped by a major loss of hearing.

He graduated from the Bowdoin Medical School in 1890. His medical life spanned one of the most interesting periods in medicine. Only four years before his graduation Fitz did the first successful appendectomy. In 1890 Behring treated diphtheria with antitoxin. In 1895 Roentgen discovered X-ray. In 1900 Wertheim devised a radical operation for uterine cancer. In 1902 Finney performed a gastroenterostomy.

At this time the majority of the physicians in Portland had moved from about Lincoln Park and Brown Street to Congress Street. There were no automobiles and there were sheds behind the Maine General Hospital for the doctors' horses. While the first telephone exchange was established in Portland in 1880, telephones were far from numerous and the medical men had speaking tubes by their doors for night use. Electric lights came to Portland in 1884 and a training school for nurses was established at the Maine General Hospital at about the same period.

After completing his internship at the Maine General Hospital, Doctor Brock became associated with Doctor Stephen Holmes Weeks who had at times been Professor of Anatomy and Surgery at the Bowdoin Medical School. Doctor Weeks was the foremost surgeon in Portland and indeed in Maine. When Doctor Brock began his association with him, there was still conflict between those who practiced antiseptic surgery with the carbolic sprays and those who favored aseptic surgery. In those days there were no separate departments of gynecology, orthopedics, and urology. Nor were there any physicians who limited their practice to surgery. One could tell who was on service at the Maine General by noting the strong reek of iodoform or carbolic acid.

Doctor Brock, indeed, grew up with modern surgery, and was for a number of years Portland's busiest surgeon. He operated on patients from Kittery

to Rockland in his earlier years on kitchen tables in many a farm house and later in the various smaller hospitals that had sprung up. A surgeon in those days had to be courageous and resourceful as he frequently had to direct the anesthesia and work without any trained assistant. He performed his last operation on his 80th birthday.

His interest in the Maine General Hospital began with the construction of the eastern pavilion of the old building by the firm of Cummings and Brock, of which his father was a member. He became an adjunct surgeon after finishing his internship, and surgeon from 1897 to 1917 when he was placed on the honor staff. During this same period he acted as instructor, assistant, and then professor of clinical surgery at Bowdoin Medical School.

Doctor Brock was on the Honor Staff at the Maine General Hospital, and until recently consulting surgeon to the Webber Hospital at Biddeford and the Goodall Hospital at Sanford. He was the recipient of a Fifty-Year Medal from the Maine Medical Association in 1940. His medical societies included the Lister Club, the Innominate Club, the Portland Medical Club, the Cumberland County Medical Society, the Maine Medical Association and the American College of Surgeons.

Doctor Brock was one of the original trustees of the Portland Farmers Club, completed 50 years in Masonry as a member of Ancient Landmark Lodge and was an authority on North American Ornithology. He often lectured before the Portland Natural History Society.

Doctor Brock married Mary Elizabeth Rounds, who died in 1936.

He is survived by one son, Henry W. Brock of Lyman, four grandchildren and three great-grandchildren.

The above summary which was prepared for the Portland Medical Club and Maine General Hospital gives our members interesting lights on the career of one of our busy surgeons in the early days of surgery in our State. The JOURNAL is pleased to present the sketch and have it in the records.

Maine Medical Center—Continued from page 271

and Ear Infirmary and chairman of the Medical Center building committee, and Simmons Brown, chairman of Maine General Hospital building committee and co-chairman of the Medical Center building committee, expressed confidence that the new building which was planned in coöperation with the medical staffs of the respective hospitals will bring a new

standard of hospital care to the community in keeping with the latest advances in medical science. They also were high in their praise for the competence of the successful bidder. They said that this company recently completed major additions to Beth Israel Hospital, Boston, and to the hospital in Framingham, Massachusetts.

REPORT ON HOUSE OF DELEGATES MEETING
At 103rd Annual Meeting of the American Medical Association
June 21-25, 1954, in San Francisco

MARTYN A. VICKERS, M. D., Bangor*

By necessity this report will not carry everything that transpired at the various meetings. Time and space do not permit a more comprehensive treatment. I am presenting only the highlights in a brief manner, and I shall welcome your individual reactions to this synopsis by letter, telephone, etc.

The major subjects of discussion and action during the sessions were fee splitting, osteopathy, closed panel medical care plans, veterans' medical care and the training of foreign medical school graduates.

Dr. Elmer Hess of Erie, Pa., was named president-elect for the coming year. Prior to his election, Dr. Hess was serving as a member of the House of Delegates and as chairman of the Council on Medical Service.

The 1954 Distinguished Service Award of the American Medical Association was voted to Dr. William Wayne Babcock, who was professor of surgery and clinical surgery at Temple University School of Medicine from 1903 to 1944. He received the award from Dr. Walter B. Martin at the Tuesday evening inaugural ceremony.

The final registration total for the San Francisco meeting was expected to reach approximately 35,000 including more than 12,000 physicians.

Regarding the osteopathic problem, it was the feeling of the committee that the justification or lack of justification of the "cultist" appellation of modern osteopathic education could be settled with finality and to the satisfaction of most fair-minded individuals by direct on-campus observation and study of osteopathic schools. The committee, therefore, proposed to the Conference Committee of the American Osteopathic Association that it obtain permission for the Committee for the Study of Relations between Osteopathy and Medicine to visit schools of osteopathy for this purpose.

The Conference Committee favorably recommended this proposal to the board of trustees of the American Osteopathic Association which considered it at a special meeting on February 6-7, 1954. It referred the question to its house of delegates for action upon the proposal in July, 1954. If the reaction of the house of delegates of the American Osteopathic Association is favorable, the on-campus observations can be carried out in the fall of this year.

(The American Osteopathic Association acted favorably upon this proposal at their meeting in July, 1954.)

The Committee therefore recommended:

1. That no action be taken on the report at this time and that final action be deferred until December, 1954.

2. That the Committee be continued until December, 1954, in order to be available to evaluate education in schools of osteopathy should the house of delegates of the American Osteopathic Association act favorably upon the recommendations of its Conference Committee.

The House of Delegates adopted two strong resolutions condemning the present practice of establishing service-connection for veterans' disabilities by legislative fiat. In recommending passage of both resolutions, the committee said that the study of the chronological expansion by law and regulation, together with evidence presented of pending legislation now before a Congressional Committee, emphasized all too clearly the imperative need of decisive action on the part of the American Medical Association. It was the opinion of the Committee that the time is at hand when the American Medical Association and its component societies should go all out in preventing this unscientific method of determination of service-connected disabilities, and that we request that copies of these resolutions be transmitted to the Congress of the United States and other appropriate federal agencies.

Among a wide variety of other actions, the House of Delegates also:

Approved a Board of Trustees report calling for discontinuation of the registration of hospitals by the Council on Medical Education and Hospitals and suggesting that the Joint Commission on the Accreditation of Hospitals be requested to undertake the registration of hospitals in addition to its present accreditation activities;

Voted to continue the holding of the annual Clinical Meetings;

Approved the establishment of a program of medical military scholarships with appropriate safeguards limiting the number of students involved, and

Approved the extension, on a voluntary basis, of the Medical Education for National Defense program which currently is in operation in five medical schools as a pilot study.

The election of officers at the closing session, in addition to the selection of Dr. Hess as president-elect, brought about the following results:

Dr. Clark Bailey of Harlan, Kentucky, was named vice-president.

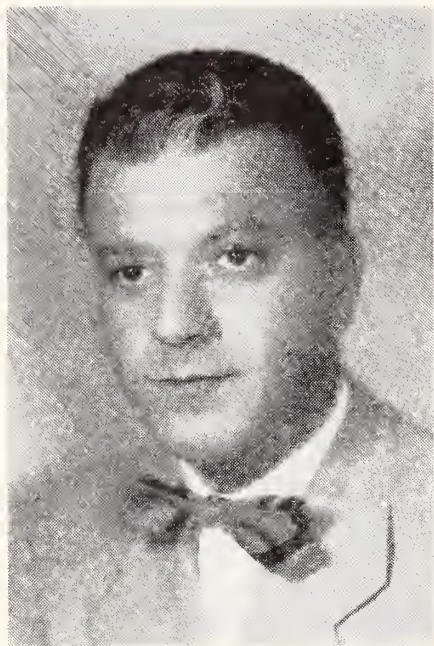
* Delegate from Maine Medical Association.

Dr. David B. Allman of Atlantic City and Dr. F. J. L. Blasingame of Wharton, Texas, were re-elected to their positions on the Board of Trustees.

Also re-elected were Dr. George F. Lull of Chicago, secretary; Dr. J. J. Moore of Chicago, treasurer; Dr. James R. Reuling of Bayside, N. Y., speaker of the House of Delegates, and Dr. Vincent Askey of Los Angeles, vice speaker.

Dr. J. Morrison Hutcheson of Richmond, Va., was named by Dr. Martin as a member of the Judicial Council to succeed Dr. Edward R. Cuniffe of New York, who served as Council chairman for many years. Dr. Homer Pearson of Miami, Florida, was elected new chairman.

State Association News



ALCID F. DUMAIS, M. D., Lewiston

Councilor—Second District

1954-1957

Committee Changes

Health Insurance Committee

At a meeting of the Council of the Maine Medical Association on August 29, 1954, William F. Mahaney, M. D., of Saco, resigned as Chairman of the Health Insurance Committee, a standing committee. And, Linus J. Stitham, M. D., of Dover-Foxcroft, was appointed Chairman of the committee to serve until the annual session in June, 1955.

Committee on Education

Dr. Mahaney also resigned as a member of the Committee on Education, a special committee. Leandre R. Charest, M. D., of Biddeford, was appointed to replace Dr. Mahaney on this committee.

Committee on Rehabilitation

A special committee appointed by the President, William F. Mahaney, M. D.:

Daniel F. Hanley, M. D., 58 Federal St., Brunswick, Chairman

Lawrence Crane, M. D., 265 Western Promenade, Portland

Oakley A. Melendy, M. D., 21 Western Ave., Augusta

Councilor Honored

Francis A. Winchenbach, M. D., of Bath, Councilor for the Third District, was recently elected President of the New England Golf Association.

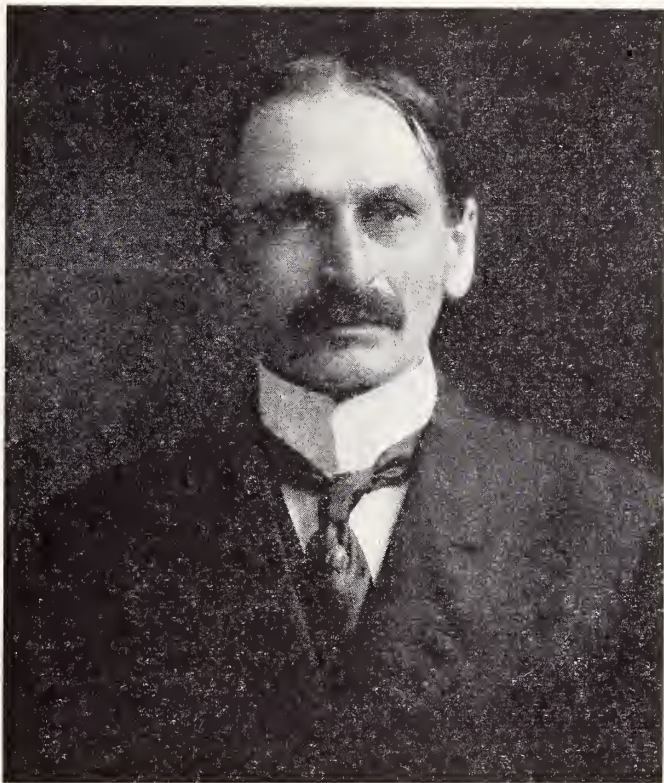
American Medical Education Foundation

AMEF Fourth Annual Meeting To Be Held January 23, 1955

The Fourth Annual Meeting of the American Medical Education Foundation state chairmen will be held at the Sheraton Hotel in Chicago on Sunday,

January 23, 1955. Specific details regarding the proposed program and reservation forms for accommodations at the Sheraton Hotel will be distributed with the November Bulletin to AMEF state chairmen and regional auxiliary chairmen.

NECROLOGY



Eugene L. Stevens, M. D.
1865 - 1954

Dr. Eugene L. Stevens, 88, one of Belfast's most respected physicians for more than fifty years, died July 24, 1954, at his home on Church Street, Belfast, Maine, after a long illness.

Dr. Stevens had been a leading member of the medical profession in Belfast since the turn of the century. He was one of the men who helped to organize and modernize the Waldo County Hospital and was a member of the surgical staff of the hospital for many years. He was on the medical staff until his most recent illness.

Dr. Stevens was born in Troy, Maine, September 20, 1865, the son of Augustus and Sarah Dyer Stevens. His secondary education was obtained at Maine Central Institute in Pittsfield. He was a pre-medical student at Bates College in Lewiston and was graduated from the Bowdoin Medical School in 1892. He started his practice in Belfast the following year.

Before coming to Belfast, he was principal of a high school for two years in New Jersey and also in Howard, Rhode Island.

In 1898, Dr. Stevens married Miss Alice Maude Holland of Lewiston, who survives him.

Dr. Stevens was a member of the Waldo County Medical Society, the Maine Medical Association and the American Medical Association. In 1942, he was honored by the Maine Medical Association when he was presented an award for Fifty Years of active practice.

He was examining physician for the Belfast battery of the Maine National Guard for many years. He was very fond of athletics and games and while in Bates College he won some little distinction in these lines. At one time he was a winner in a running race and at a tennis tournament he was "Champion of the Doubles."

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COUNTY SOCIETY NOTES

Hancock

A regular meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, Maine, on September 8, 1954. The lawyers of the county were invited to participate in a panel discussion on Medical Examiners Problems. There were 11 members and 11 guests present. The meeting was opened by the president, Dr. Mason Trowbridge of Ellsworth. A motion was made and passed that the reading of the minutes be postponed to the following meeting.

The program chairman, Dr. Charles H. Knickerbocker of Bar Harbor, introduced a panel of speakers and asked each to discuss three questions on medical examiner problems. The panel included the county attorney, the county attorney-elect, a representative from the Attorney General's office, two medical examiners and Dr. Arch H. Morrell of the State Pathological Laboratory. Following this there was an open discussion on the same subject.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Deceased

Cumberland

Harry L. Curtis, M. D., Portland—September 17, 1954.

Penobscot

Albert W. Fellows, M. D., Bangor—July, 1954.

Waldo

Eugene L. Stevens, M. D., Belfast—July 24, 1954.

Washington

Walter J. Gilbert, M. D., Calais—September 6, 1954.

NEWS AND NOTES

Jack Spencer, M. D., of Portland Elected President of the New England Roentgen Ray Society

Jack Spencer, M. D., Chief of Service, Department of Roentgenology at the Maine General Hospital, Portland, Maine, was elected President of the New England Roentgen Ray Society at a recent meeting of the society.

Other officers include: Felix G. Fleischer, M. D., Boston, Vice-President; Stanley M. Wyman, M. D., Boston, Secretary, and Magnus I. Smedal, M. D., Boston, Treasurer.

Pediatric Institute for Maine General Practitioners

On September 10, 1954, a pediatric institute for general practitioners throughout the State, was held at the Maine General Hospital, Portland, Maine. The Institute was sponsored by the Division of Maternal and Child Health, Maine Department of Health and Welfare and was endorsed by the Maine Medical Association.

Opening the Institute, Alice A. S. Whittier, M. D., Chief of Pediatric Service of the Maine General Hospital, welcomed the group.

The morning session was devoted to a presentation of two subjects: Eye Problems in Infancy and Childhood, by S. Forrest Martin, M. D., Director of Eye Clinic, The Children's Hospital, Boston, and Hearing and Related Speech Disturbances in Children, by Charles Ferguson, M. D., Associate Laryngologist of the same institution.

Following noon recess, Donald D. Matson, M. D., Associate Neurosurgeon of The Children's Hospital, spoke on neurosurgical conditions in childhood.

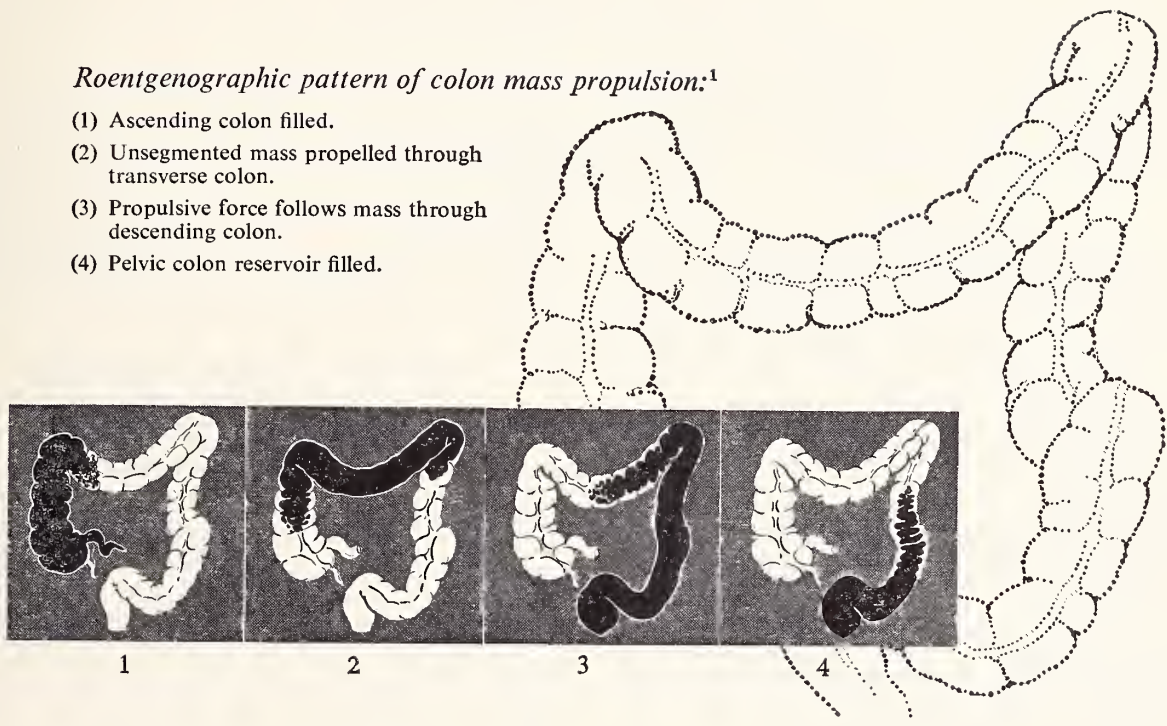
The Institute concluded with ward rounds conducted by Dr. Whittier.

Editor's Note: The annual Pediatric Institutes which have been sponsored by the Division of Maternal and Child Welfare under the general supervision of Dr. Ella Langer, Director of the Division, have been enlightening contributions

Continued on page 282

*Roentgenographic pattern of colon mass propulsion:*¹

- (1) Ascending colon filled.
- (2) Unsegmented mass propelled through transverse colon.
- (3) Propulsive force follows mass through descending colon.
- (4) Pelvic colon reservoir filled.



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1. Best, C. H., and Taylor, N. B.: *The Physiological Basis of Medical Practice: A Text in Applied Physiology*, ed. 5, Baltimore, The Williams & Wilkins Company, 1950, pp. 579-583.
2. Bargen, J. A.: *A Method of Improving Function of the Bowel*, *Gastroenterology* 13:275 (Oct.) 1949.

News and Notes—Continued from page 280

to the profession, especially to the men who have an interest in the care and welfare of infants and children. Well qualified men have presented carefully prepared dissertations on various aspects of the subject. The Division has, furthermore, sponsored an occasional featured speaker at our annual sessions. Through the pages of the JOURNAL we would like to express appreciation for the contributions.

State of Maine**Board of Registration of Medicine**

Adam P. Leighton, M. D., 192 State Street, Portland, Secretary.

List of Physicians Licensed by the State of Maine Board of Registration of Medicine in July, 1954.

Through Examination

Henry A. Adams, M. D., Midtown Hospital, 309-315 E. 49th St., New York, N. Y.

Renato Baserga, M. D., 3219 Eastwood Ave., Chicago 25, Ill.

John M. Campbell, M. D., 61st General Dispensary, A.P.O. 55, c/o P.M., New York, N. Y.

Michael D. Joyce, M. D., 18 Chestnut St., Boston, Mass.

Enzo Krahll, M. D., St. Vincent's Hospital, New York 11, N. Y.

Paul J. LaFlamme, M. D., 79 Androscoggin Ave., Lewiston, Maine.

Frank I. Matteo, M. D., 463 Broadway, Providence 9, R. I.

Eugene Mironoff, M. D., c/o Dr. Ralph E. Earle, Vinalhaven, Maine.

Mary J. Tracy, M. D., South Bristol, Maine.

Channam Tze, M. D., 5859 Clemens Ave., St. Louis 12, Mo.

Mary Retsina-BaBakitis, M. D., 110 West 77th St., New York 24, N. Y.

Through Reciprocity

Otto Bandler, M. D., Veterans Hospital, Rocky Hill, Conn.

Roland E. Berry, M. D., 166 Broadway, Bangor, Maine.

Walter H. Caskey, M. D., 520 South St., Needham, Mass.

James D. Clement, Jr., M. D., 7th Station Hospital, A.P.O. 209, c/o P.M., New York, N. Y.

Donald P. Cole, Jr., M. D., Deering St., Portland, Maine.

Louis V. Dorogi, M. D., Freeport, Maine.

Raymond G. Giberson, M. D., General Hospital, Presque Isle, Maine.

Parker Heath, M. D., 7 Tyler St., Belmont, Mass.

Parker Heath, Jr., M. D., 58 Washington St., Camden, Maine.

Maurice E. Heck, M. D., Kansas Rd., Milbridge, Maine.

Harry M. Helfrich, Jr., M. D., 23 Hillside St., Presque Isle, Maine.

Nancy R. Helfrich, M. D., 23 Hillside St., Presque Isle, Maine.

Leon R. Jellerson, M. D., Sanford, Maine.

Daniel F. Milam, Jr., M. D., Surry, Maine.

Olin C. Moulton, M. D., 130 North Virginia St., Reno, Nevada.

Francis J. O'Connor, M. D., 61 Thomas St., East Dedham, Mass.

Clarence R. O'Crowley, M. D., Christmas Cove, Maine.

Hadley Parrot, M. D., Bangor, Maine.

Hugh P. Robinson, M. D., Rt. 99, Falmouth Foreside, Maine.

Everett D. Schubert, M. D., 188 Pleasant Valley St., Methuen, Mass.

Daniel R. Shields, M. D., Central Maine General Hospital, Lewiston, Maine.

John Shoukimas, M. D., 44 Garden St., Hartford, Conn.

Robert D. Wakefield, M. D., 71 Toxteth St., Brookline, Mass.

American College of Surgeons**Sectional Meetings for 1955**

Providence, Rhode Island, March 3, 4, 5, 1955, at The Sheraton-Biltmore

Dr. Henri E. Gauthier and his Committee of Rhode Island surgeons have prepared an unusually practical program. Sharing the program with local talent will be Francis D. Moore, Boston; Jonathan E. Rhoads, Philadelphia; J. Edward Flynn, Boston; John W. Strieder, Brookline; Lloyd Brown, Bangor; C. Everett Koop, Philadelphia; Orvar Swenson, Boston; Jose M. Ferrer, New York; John Merrill, Boston; Jacob Fine, Boston; F. A. Simeone, Cleveland; Leland S. McKittrick, Brookline; Clinton R. Mullins, Concord; William J. Engel, Cleveland; Garnet W. Ault, Washington; Henry Doubilet, New York; Alexander P. Aitken, Brookline; John H. Garlock, New York; Danely P. Slaught, Chicago; John H. Gibbon, Jr., Philadelphia; Harold E. Harris, Cleveland; Julian Johnson, Philadelphia; Robert M. Zollinger, Columbus; I. S. Raydin, Philadelphia; and Richard B. Cattell, Boston.

American Board of Obstetrics and Gynecology

The next scheduled examination (Part I), written examination and review of case histories, for all candidates will be held in various cities of the United States, Canada, and military centers outside the continental United States, on Friday, February 4, 1955.

Case Abstracts numbering 20 are to be sent by the candidate to the Secretary as soon as possible after receiving notification of eligibility to the Part I written examination.

Candidates are reminded at this time that lists of hospital admissions must accompany new applications and requests for reopening.

ROBERT L. FAULKNER, M. D., Secretary,
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TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

The Stage Is Set — A Program for More Effective Control of Tuberculosis in the United States

By James E. Perkins, M. D., National Tuberculosis Association, April, 1954.

The year 1954 marks the fiftieth anniversary of the National Tuberculosis Association, the anniversary of the nationwide fight against tuberculosis in the United States. The campaign against tuberculosis as conceived by the founders of the National Tuberculosis Association is nationwide in scope but the basic unit is the local, self-governing tuberculosis association. The local associations work together in democratically constructed state associations. The National Association serves the state and local associations, coordinates their efforts, and carries on those responsibilities which can be handled only by a national body.

As the leader of the volunteer forces in the war against TB, the National Tuberculosis Association coordinates the efforts of more than 3,000 voluntary tuberculosis associations and aids them to re-examine, strengthen, and expand their programs for better service in accordance with local needs; works with its affiliated associations and supplies them with the health education materials needed to spread knowledge about the tuberculosis problem; advances scientific knowledge about tuberculosis, through its medical section, the American Trudeau Society; works for the improvement of rehabilitation services for patients; promotes efforts to find cases of tuberculosis; stimulates the maintenance of adequate official health, welfare, and educational agencies; promotes the recruitment and training of skilled professional personnel for tuberculosis control; cooperates with all the forces fighting tuberculosis; and seeks to improve international efforts to control tuberculosis.

The activities of the voluntary tuberculosis association in communities throughout the United States are financed by the annual sale of Christmas Seals. Of the total proceeds, 94 per cent is used by the associations within the states where the money is raised. Six per cent is allotted to the National Tuberculosis Association.

When the NTA was founded in 1904, TB was the major health problem, the first cause of death in this country. Tuberculosis is now the sixth cause of death (1950). This decline represents great progress, but even a brief summary of the present situation indicates the seriousness of the problem today.

Tuberculosis is a totally unnecessary disease. It can be prevented. It can be cured. Yet, tuberculosis remains a leading cause of death in the age group from 15 to 34 — decisive years in the lives of young people. Tuberculosis is one of the greatest killers among the American Indians and among Americans of Spanish descent. The death rate among Negroes is three and a half times the rate among whites. Tuberculosis kills approximately twice as many men as women. TB mortality is high among people who receive public assistance and inmates of mental and other institutions.

But the TB problem is not as adequately stated in terms of death as it is of living people — the 400,000 people who have active TB today. They may not die of tuberculosis, but they will have to live with the disease and with the inevitable changes it brings. Within the next year, about 100,000 people will catch TB. We are not preventing the spread of tuberculosis.

What does "a case of tuberculosis" mean? It means a suffering human being with a chronic, debilitating disease; a person who may have to undergo a long period of hospitalization; young people whose hopes may be blasted.

Tuberculosis must be considered not only in terms of its cost in lives and in human suffering. Its cost in money is

important to the economic life of the country. The total TB bill in the United States is conservatively estimated at more than 600 million dollars a year! This figure includes the cost of case finding, care of patients, public health nursing, health education, rehabilitation, medical research, pensions to veterans, and public assistance to patients' families.

Most of this comes out of the taxpayer's pocket. The rest is borne by private agencies, individuals, and their families. The cost of one case of tuberculosis is difficult to determine. However, a rough estimate is \$15,000, including medical care, compensation, pensions, relief payments and loss of wages.

Tuberculosis is caused by a germ, the tubercle bacillus, which is spread usually through the air by persons with active disease. Many adults have at some time come in contact with the tubercle bacilli, but the disease has made headway in only a fraction. Approximately 800,000 persons are believed to have inactive tuberculosis. The disease has been arrested, either spontaneously or by medical treatment. Although the disease may remain in this arrested state, these people must have regular medical supervision. Together with the estimated 400,000 active cases, they constitute a group of 1,200,000 people who need medical supervision. Of the 400,000 active cases, about 250,000 are known to health authorities. The other 150,000 are the "unknown" cases — the people whose disease has never been reported.

According to a 1953 survey, 130,000 hospital beds are set aside for tuberculosis patients in the U. S., including 22,000 in mental and penal institutions. If all the unknown cases of TB were found and all patients who refuse hospitalization were to accept it, they would be unable at the present time to get hospital treatment. Yet, modern medical opinion stresses the importance of hospital treatment of the tuberculous.

There is no simple solution to the problems of tuberculosis control. The mere spending of more money will not solve them. We need to improve further our over-all program of tuberculosis control in which official and voluntary agencies join in a concentrated, cooperative effort.

Such a program includes:

Greater efforts to find all cases of tuberculosis. Case finding among high-prevalence groups — such as admissions to general hospitals, certain racial and national groups, mental patients — must receive priority and be intensified.

Greater efforts to make the best techniques of modern TB treatment readily available to all patients. This means provision of adequate hospital beds and supervision when hospitalization is impossible. It means improved education of the medical, nursing, and ancillary professions. It means better education of patients. It means medical research for further knowledge about tuberculosis. It means rehabilitation.

Greater efforts to build up the resistance of people to tuberculosis infection. Specific resistance calls for medical research to find a superior vaccine and wider use of our best present vaccine, BCG, in the groups most vulnerable to tuberculous infection. Improved nonspecific resistance calls for more education of the general public in nutrition and other aspects of healthy living.

This, then, is the program for tuberculosis control in this country. *It is difficult — it is ambitious. It is necessary.* Every case of tuberculosis is an indictment against society — irrefutable evidence that someone, somewhere, was either ignorant or callous to his responsibility in preventing unnecessary human suffering.

The stage is set for total victory. There must be no faltering at this critical point!

(The printing of Tuberculosis Abstracts is made possible by the cooperation of your local tuberculosis and health association.)

* From Vol. XXVII, October, 1954, No. 10.

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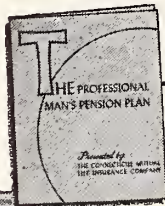
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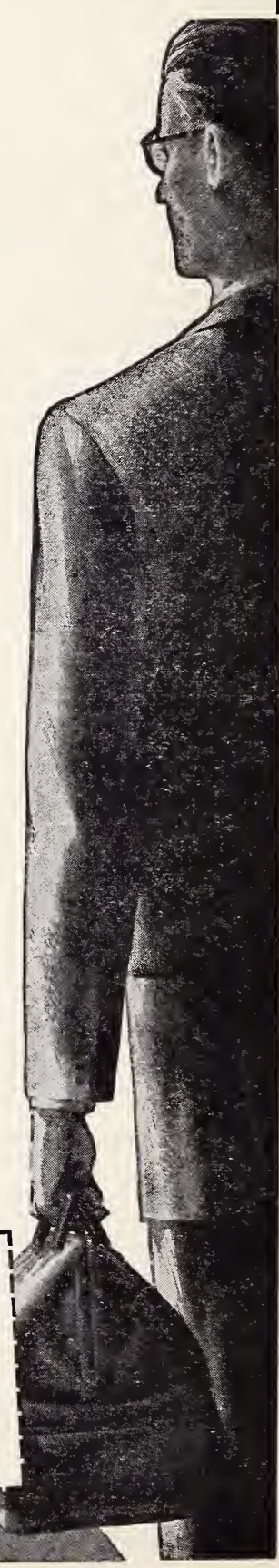
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The Journal of the Maine Medical Association

Volume Forty-Five

Portland, Maine, November, 1954

No. 11

ENDOSCOPIC AIDS IN DIAGNOSIS*

EDWARD B. BENEDICT, M. D., Boston, Massachusetts**

Mr. President, members of the Maine Medical Association and guests:—In discussing Endoscopic Aids in Diagnosis I will divide my talk into four subjects namely, Bronchoscopy, Esophagoscopy, Gastrosocopy and Peritoneoscopy.

BRONCHOSCOPY

Anatomy.

I need hardly remind you that the anatomy of the tracheobronchial tree limits the use of the bronchoscope to the major bronchi. In introducing the bronchoscope an excellent view is obtained of the epiglottis and vocal cords. Paralysis of one vocal cord very frequently means inoperable carcinoma of the lung but we will speak more of that later. The trachea is next observed and is normally in the midline with normal mucosa and caliber. The carina, of course, divides the trachea into the two major bronchi. Normally it should be sharp and freely movable. Widening and fixation of this structure is of importance in the diagnosis of carcinoma. The right main bronchus can be well seen with the ordinary bronchoscope and so can the orifices of the right upper lobe bronchus, right middle lobe bronchus and the terminal bronchi which include the posterior basal, lateral basal, and

anterior basal divisions. Similarly the left main bronchus can be well seen with the straight bronchoscope, and by means of the right angle telescope the subdivisions of both upper lobes can be well demonstrated. These subdivisions include on the right side the anterior, posterior, and apical, and on the left side they include the anterior, apical, posterior and lingula.

Indications.

Among the indications¹ for bronchoscopy are unexplained cough, hemoptysis, wheeze, or evidence of bronchial obstruction. Wheeze is often present when there is a lesion partially obstructing the lumen of the bronchus but permitting the passage of air into and out of the lung. In ball valve obstruction a foreign body or tumor may partially obstruct a bronchus in such a way as to permit air to pass the bronchus on inspiration but to completely obstruct the bronchus on expiration. This results in emphysema localized to the lobe or segment involved. Complete bronchial obstruction, of course, results in atelectasis. A further indication for bronchoscopy is an X-ray examination which is doubtful or suspicious; as for example, when the radiologist reports "probable bronchiectasis but tuberculosis or carcinoma cannot be excluded." In such a case the only symptom was hemoptysis. Bronchoscopy in that case disclosed a carcinoma close to the carina which was operable. In another case pneumonitis persisted for six years following pneumonia. The patient had symptoms of cough, nausea and pain in the left chest. Bronchial

* Presented at the Fall Clinical Session of the Maine Medical Association, Portland, Maine, September 25, 1954.

** Assistant Clinical Professor of Surgery, Harvard Medical School. Endoscopist, Massachusetts General Hospital.

From the Department of Surgery, Harvard Medical School, and the Surgical Services, Massachusetts General Hospital.

obstruction was present and was relieved by bronchoscopy which resulted in complete clearing of the pneumonitis and alleviation of all symptoms.

Foreign Body.

Foreign bodies constitute only about 2 per cent of the work of the endoscopist but they are still dramatic events. Metallic foreign bodies which are promptly removed cause very little trouble. Septic foreign bodies such as fragments of teeth or bone may, if allowed to remain in the bronchus, set up a very severe inflammatory process with partial bronchial obstruction, atelectasis, pneumonitis, bronchiectasis, lung abscess and permanent lung damage which is likely to require lobectomy. Vegetable foreign bodies also may cause a great deal of trouble because they swell up and cause bronchial obstruction. All foreign bodies in the bronchus should be removed as promptly as possible.

Bronchiectasis.

Unilateral bronchiectasis is a surgical disease requiring lobectomy if the patient is in good condition. Bronchoscopy helps in hemorrhagic bronchiectasis in deciding from which lobe the bleeding is coming and also from which lobe the most secretion may be exuding. In bilateral or otherwise inoperable bronchiectasis, as for example in poor risk patients, repeated bronchoscopic aspirations at regular intervals help the patient symptomatically and result in improved appetite and gain in weight and strength.

Tracheobronchial Tuberculosis.

Bronchoscopy is the only positive means of making a diagnosis of tracheobronchial tuberculosis. It is indicated in pulmonary tuberculosis when there are positive signs and symptoms as shown by atelectasis, wheeze, difficulty in raising sputum, persistent cough or dyspnea or intermittent febrile attacks. It is also indicated when collapse therapy is contemplated in order to determine the status of the tracheobronchial mucosa. Since the advent of streptomycin there has been a very marked diminution in the cases of tracheobronchial tuberculosis.

Benign Tumor.

Benign tumors of the bronchus usually manifest themselves by hemoptysis, and sometimes by wheeze, and are often accompanied by intermittent febrile attacks as a result of partial bronchial obstruction. The so-called bronchial adenoma is by far the most common of all benign tumors of the bronchus. Other benign tumors which may be encountered are lipoma, fibroma, neurofibroma, fibromyoma, chondroma and osteoma. The diagnosis of adenoma can be suspected clinically and by X-ray examination especially if the patient is a young individual. A positive microscopic diagnosis, however, can only be made by bronchoscopy with biopsy. There is, however, danger of hemorrhage in taking a biopsy of a vascular adenoma. Hence in cases where the adenoma completely blocks

the main bronchus and hemorrhage may result in complete obstruction of the other main bronchus it is wise to refrain from biopsy. Bronchoscopic removal of an adenoma is inadvisable not only because of the possibility of hemorrhage but also because of failure to get the base of the adenoma and failure to remove the extrabronchial portion of the tumor. In other words the modern treatment of adenoma is surgical in a good risk patient. Frequently there is irreparable lung damage from bronchial obstruction requiring lobectomy and sometimes pneumonectomy.

Bronchogenic Carcinoma.

Bronchoscopy is essential in obtaining a positive microscopic diagnosis of carcinoma. The tumor can be easily reached if it occurs in the trachea or main bronchi but in peripheral lesions the tumor is beyond the reach of the bronchoscope, in which case bronchoscopy may help in obtaining washings for cytology study. Furthermore bronchoscopy gives valuable aid in determining the operability of bronchogenic carcinoma. Paralysis of a vocal cord usually means that the disease is inoperable because of involvement of the recurrent laryngeal nerve. Likewise widening and fixation of the carina often means inoperability due to malignant invasion of the mediastinal lymph nodes. Furthermore if the growth itself is fixed or located in the trachea or at a high level in either main bronchus, extending above the level of the carina it is almost certainly inoperable.

Other Primary Malignant Bronchial Tumors.

Sarcoma is exceedingly rare but the diagnosis can sometimes be established by bronchoscopy. Lymphoma seldom invades the lumen of the bronchus but results in extrinsic pressure on the bronchus with deformity and partial obstruction. Bronchoscopy is thus of assistance in diagnosis.

Metastatic Malignant Disease of the Bronchus.

Metastatic malignant tumors occasionally occur in a major bronchus,² in which case the diagnosis may be established by bronchoscopy.

Postoperative Collapse.

In pulmonary atelectasis following surgery a major bronchus is sometimes completely obstructed by a plug of mucus. In such cases bronchoscopic aspiration is helpful; in fact, we consider it so important that we are training not only our surgical residents but our anesthesia residents at the Massachusetts General Hospital in performing aspiration bronchoscopy for relief of postoperative collapse.

ESOPHAGOSCOPY

Indications.

In general esophagoscopy is indicated in all cases of esophageal obstruction: in all cases where a positive microscopic diagnosis is desired; in all cases where X-ray examination is inconclusive, and in all cases of suspected foreign body. It is also indicated

in many cases where X-ray examination is negative but where esophageal symptoms persist. Dysphagia, regurgitation, substernal pain or burning are among the indications for esophagoscopy. Hematemesis may take place from esophagitis, hiatus hernia, esophageal ulcer, varices or tumor. In the diagnosis and treatment of benign esophageal stenosis, lye stricture, web and achalasia esophagoscopy is indicated.

Foreign Body.

Foreign bodies are commonest in children, especially children in poor economic circumstances who do not get the supervision received by children of more well-to-do parents. Most foreign bodies can be removed by esophagoscopy under local anesthesia but in children it is wise as a rule to use a general anesthetic. X-ray examination readily discloses opaque foreign bodies but is of comparatively little value in non-opaque foreign bodies. It is usually better not to give a swallow of barium because that frequently coats the foreign body and may make removal of it more difficult. Foreign body obstruction is common in patients who already have a narrowing of the esophagus such as congenital atresia, esophageal web, benign stenosis or neoplasm.

Benign Stenosis.

Benign esophageal obstruction commonly occurs in association with hiatus hernia, esophagitis (with or without esophageal ulcer), and duodenal ulcer. Esophagitis is probably the result of regurgitation of acid gastric secretions into the lower esophagus, and after this inflammatory process has been present for some time stenosis occurs.^{3, 4} Ulceration may or may not be present. In the early stages esophagoscopy and bouginage results in definite improvement but in the later stages when fibrosis has taken place bouginage may be of only slight and rather temporary benefit. However, by esophagoscopy and bouginage, combined with repeated bouginage in the office or Out Patient Department, using a previously swallowed thread as a guide, 90% of patients can be benefited to such a degree that surgery is not necessary. Benign stenosis may also occur at the esophagogastric anastomosis following resection for benign or malignant lesions of the esophagus. Such cases are also benefited by bouginage.

Carcinoma.

Although the X-ray diagnosis of esophageal carcinoma is frequently quite accurate a positive microscopic diagnosis can only be obtained by esophagoscopy with biopsy. Moreover there are some cases of esophageal carcinoma which are radiologically indistinguishable from esophagospasm or benign stenosis. Esophagoscopy is therefore indicated in order to establish a positive microscopic diagnosis. In rare cases, carcinoma of the esophagus develops in lye stricture⁵ and occasionally in cases of congenital stricture. It may also develop in the megaesophagus associated with achalasia. Frequent X-ray examina-

tion and esophagoscopy must therefore be done in such cases. Furthermore since carcinoma of the esophagus may perforate into a bronchus it is worth while to perform bronchoscopy in cases of esophageal carcinoma in the upper or middle third of the esophagus.

Achalasia.

In order to exclude benign stenosis and carcinoma esophagoscopy is usually indicated in cases of achalasia. Sometimes much can be accomplished by using a long 53 cm. esophagoscope and passing it through the cardia into the stomach at the time of esophagoscopy, thus dilating the cardia as well as excluding other pathology. After one diagnostic esophagoscopy further treatment of achalasia consists in the use of the Hurst mercury bougie, and in intractable cases the use of the Browne-McHardy⁶ mercury bougie with dilating bag attachment.

Benign Mucous Membrane Pemphigus.

In a few cases the fibrous process which involves the eyelids in this disease may also involve the esophagus with web-like stenosis.⁷ In such cases esophagoscopy and bouginage results in improvement.

Lye Stricture.

Esophagoscopy and bouginage is of definite benefit in this disease resulting in dilatation of the narrowed area and exclusion so far as possible of malignant disease. It should usually be followed up by office or Out Patient bouginage using a previously swallowed thread as a guide.

Varices.

The diagnosis of esophageal varices can frequently be made by careful X-ray study but in doubtful cases esophagoscopy is indicated to confirm or exclude such a diagnosis. Although the injection of a sclerosing solution into the esophageal varices through the esophagoscope has been used in a good many clinics it is only a palliative procedure and it now seems wiser to make a direct surgical attack by thoracotomy and ligation,⁸ to be followed later by portocaval or splenorenal shunt.

GASTROSCOPY

Indications.

Gastroscopy should never be a routine method of examining the stomach but should be reserved for patients who have persistent gastro-intestinal symptoms with negative X-rays, patients in whom X-ray examination is doubtful or raises the question of gastritis. Gastroscopic examination is also helpful in the differential diagnosis of benign and malignant gastric ulcer, in the differential diagnosis of gastritis, lymphoma, and diffuse carcinoma,^{9, 10} and in differentiating between benign and malignant tumors. Since biopsies can now be taken by means of the Benedict Flexible Operating Gastroscope¹¹ the differential diagnosis of benign and malignant conditions

is more accurate than heretofore. Gastroscopic biopsy, however, has its limitations, especially with regard to the site of biopsy, and therefore negative biopsies cannot be regarded as excluding malignant disease. A diagnosis of gastric atrophy can be made only by gastroscopy. Since atrophy occurs idiosyncratically as well as in pernicious anemia it is of importance to examine patients suspected of having atrophic gastric mucosa. Unexplained anorexia, indigestion, fatigue or loss of weight may be indications for gastroscopy.

Gastritis.

To the gastroscopist the normal stomach appears smooth with an orange-red color, smooth pliable rugae, larger on the greater curvature than elsewhere, and readily distensible with the introduction of air. Striking changes occur in the presence of gastritis, which is usually divided into superficial, hypertrophic, and atrophic.

In *superficial gastritis* there is increased reddening, edema and adherent secretion. The mucosa may bleed easily and erosions are sometimes present. This is the type of gastritis which corresponds to the acute gastritis as described by the pathologist.

Hypertrophic gastritis presents a verrucous appearance of the mucosa. The rugae may be segmented and the mucosa may present a dull surface in contrast to the numerous highlights seen in the normal mucosa. The appearance may be described as granular, warty, pebbly or cobblestone. Erosions and superficial ulcerations may be present. In some cases the pebbly appearance is so marked as to suggest neoplasm. It is in such cases that gastroscopic biopsy is of great importance. Hypertrophic gastritis as described by the gastroscopist corresponds to the chronic gastritis as described by the pathologist. However, there may be many cases in which acute and chronic gastritis occur together.

In *gastric atrophy* the gastroscopist sees a very thin pale gray smooth mucosa through which numerous blood vessels are easily visible. Gastric rugae are entirely absent and peristalsis is usually absent. Since X-ray examination may show thick folds even in the presence of gastric atrophy gastroscopic examination is absolutely essential in establishing the diagnosis.

Gastric Ulcer.

In benign gastric ulcer the gastroscopist sees a lesion characterized by sharp margins and a clean base whereas in malignant ulcers the margins are likely to be irregular and the base dirty and hemorrhagic. Unfortunately due to the shape of the stomach it is not possible to see all gastric ulcers but when a good view of the ulcer can be obtained by gastroscopy it does help in differentiating benign from malignant ulcers. However, since malignancy can never be 100 per cent excluded even in an ulcer which looks benign, all methods of study must be

undertaken to get the picture as a whole and to decide the proper therapy.

Benign Tumors.

In benign tumors the gastroscopist can often see that the lesion is submucosal and that normal mucosa extends over the tumor. Non-ulcerating submucosal tumors are likely to be benign. Pedunculated tumors are also likely to be benign. If, however, the tumor has a broad sessile base it must be regarded with great suspicion of malignancy. Gastroscopic biopsy is of value if it demonstrates malignancy, but cannot be relied upon to exclude it.

Carcinoma.

If X-ray examination demonstrates quite conclusively that there is a large tumor of the stomach it is seldom necessary to perform gastroscopy. However, if it is doubtful as to the presence of a tumor or if the differential diagnosis arises between gastritis, lymphoma and infiltrating carcinoma gastroscopic study with biopsy becomes of great importance. Folds may sometimes appear thick and somewhat rigid to the radiologist when they appear normal to the gastroscopist. In such cases a negative gastroscopy with negative biopsy is reassuring. On the other hand in some cases the gross appearance of the mucosa may be very suggestive of gastritis or of tumor formation and the gastroscopic biopsy may show a definite gastritis or highly undifferentiated carcinoma or lymphoma. Such evidence is of undoubted importance to the clinician.

Functional Dyspepsia.

Organic disease of the stomach must be differentiated from functional dyspepsia. Sometimes the only means of doing so is by gastroscopic study. If a normal gastric mucosa is found and confirmed by a negative gastroscopic biopsy the clinician is thus reassured that he is not dealing with organic disease.

Extrinsic Tumor.

When there is radiologic evidence of extrinsic tumor causing gastric deformity the question sometimes arises as to whether or not the tumor is intrinsic or invading the stomach from outside. Gastroscopic examination can be helpful under such conditions. If normal gastric mucosa is found together with a gastric ulcer the tumor is probably extrinsic. If on the other hand the tumor involves the wall of the stomach, the mucosa appears abnormal and the wall of the stomach is distorted and rigid.

PERITONEOSCOPY

Peritoneoscopy is the direct inspection of the abdominal and pelvic cavities by an endoscopic instrument. It is often a very valuable procedure when performed by a competent observer and for certain very definite indications.

Indications.

Peritoneoscopy may be indicated in any abdominal or pelvic condition where the diagnosis is obscure or

where additional evidence is needed to establish a diagnosis or to plan treatment. Information is often obtained which will be helpful in deciding for or against laparotomy. The procedure may be done with relative impunity on patients who are considered to be poor surgical risks but in whom a diagnosis is urgently needed. Peritoneoscopy is particularly helpful in hepatomegaly, malignant disease, cirrhosis of the liver, tuberculous peritonitis, and unexplained ascites.^{12, 13} In gynecology it is a useful procedure in suspected ovarian carcinoma to determine the diagnosis and the extent of the disease. Biopsy can be readily obtained from the liver or from the peritoneum, thus furnishing positive histologic proof of the diagnosis.

Contraindications.

Serious cardiac or pulmonary pathology may be a contraindication to peritoneoscopy because the abdominal distention necessary may embarrass the circulation or the motion of the diaphragm. Peritoneoscopy is contraindicated in acute inflammatory conditions because of the danger of spreading infection. When there are many abdominal adhesions a puncture site must be selected at a place which is thought to be free of adhesions, avoiding especially previous laparotomy scars, and an assistant should be present to watch the patient's color, pulse, blood pressure, respirations and general condition. In my experience with over 1000 peritoneoscopies there has been a mortality of 0.5 per cent due to perforation or hemorrhage or biliary peritonitis. Considering the fact that many of these patients have been very old, and some almost moribund, this mortality is very low. One death was due to improper selection of the patient, two occurred from hemorrhage in biopsying advanced carcinoma of the liver, one from bowel perforation in very extensive tuberculous peritonitis and one from biliary peritonitis.

Evaluation of the Method and Analysis of Results.

Exploratory laparotomy has been avoided in about 37 per cent of the cases examined by peritoneoscopy. The purpose of peritoneoscopy has been fulfilled in 93 per cent of the cases examined. By this it is meant that the clinical diagnosis has been established or confirmed, that suspected metastatic malignancy has been excluded as far as possible, an abdominal mass has been inspected, the liver has been examined and a biopsy taken, or the cause of otherwise unexplained ascites has been established. The clinical diagnosis has been entirely changed by peritoneoscopy in 4 per cent of the cases examined. Failures when they occur in the hands of an experienced examiner are due almost wholly to widespread adhesions rendering the examination impossible. With proper selection of cases there are less than 2 per cent failures. Errors in diagnosis rarely occur, especially if a biopsy is obtained.

Carcinoma.

About half of the peritoneoscopies performed are for question of carcinoma and in about 85 per cent of those examined for that purpose the presence or absence of metastases was established by peritoneoscopy. These include especially carcinomas of the stomach, ovary and liver. The question of metastatic carcinoma may also arise in tumors of the pancreas, colon, rectum, esophagus, bronchus, breast, gallbladder, kidney, adrenal or other primary sites. Liver or peritoneal metastases under these conditions can be established or excluded by peritoneoscopy. Similarly peritoneoscopy may be of assistance in sarcoma and lymphoma. In unexplained ascites peritoneoscopy may definitely establish a diagnosis of tuberculous peritonitis. In some such cases tuberculous peritonitis had not even been suspected clinically.

CONCLUSIONS

A brief review has been given indicating the value of bronchoscopy, esophagoscopy, gastroscopy and peritoneoscopy in the diagnosis and treatment of certain diseases.

Bronchoscopy is often useful in cough, hemoptysis, wheeze, bronchial obstruction, bronchitis, bronchiectasis, tracheobronchial tuberculosis, and foreign body, as well as in benign or malignant tumors of the trachea or bronchi.

Esophagoscopy is of value in esophagitis, hiatus hernia, esophageal ulcer, benign stenosis, lye stricture, web, achalasia, diverticulum, varices, tumor, foreign body, and sometimes in extrinsic pressure, trauma, fistula, pellagra, scleroderma, myasthenia gravis, and emotional dysphagia.

Gastroscopy should be performed when the clinician is in doubt about the diagnosis; when gastric symptoms persist in spite of negative X-rays; in unexplained hematemesis; in suspected gastritis; and in many cases of gastric ulcer, carcinoma, and lymphoma. No gastroscopic examination can be considered complete without biopsy.

Peritoneoscopy is indicated in many cases of hepatomegaly, suspected malignant disease of the liver or peritoneum, cirrhosis of the liver, tuberculous peritonitis, unexplained ascites, and ovarian carcinoma.

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RADIO ISOTOPE PROGRAM AT THE MAINE GENERAL HOSPITAL

C. LAWRENCE HOLT, M. D.*

Interest in radioactive isotopes at the Maine General Hospital metamorphized from a somnolent conceptual stage to one of bursting kinetic activity in 1950 when Dr. Joseph Porter, Head of the Department of Pathology and of the Tumor Clinic, accepted a \$1,000 pledge from the Soroptimist Club** of Portland, the purpose of the gift being to "aid in the study and treatment of Cancer." The pledge was used to purchase from TRACERLAB of Boston a Geiger-Mueller tube and autoscaler. From 1950 to 1952 very little progress was made due to various and sundry reasons. A definite Radio Isotope Committee was finally formed, however, with Dr. Porter as Chairman. In 1953 Dr. Jack Spencer, Head of the Department of Radiology, was appointed Chairman, and due to his influence further funds were obtained from the Soroptimist Club, from private individuals who were stimulated to the "giving stage" by Dr. Spencer and a very worthwhile and much appreciated gift of \$2,000 from the Maine Cancer Society. The writer was assigned to investigate and aid in the development of clinical application, the assignment being determined presumably on the basis of my having worked with radioactive isotopes at the Evans Memorial in Boston, 1946, under the guidance of Dr. Joseph Ross. This work was limited to the clinical application of radioactive phosphorus-P32. In 1952 and 1953 further time was spent with Dr. Ross studying and using radioactive iodine-I131 at the Evans Memorial, Mass. Memorial Hospitals and one of the V.A. Hospitals (Cushing General). In July of this year, the Executive Committee of the Maine General Hospital recommended to the Board of Directors that a separate Radio Isotope Department be formed, that I be appointed Director of the new department and that Dr. Stanley Herrick be appointed Associate Director. Dr. Herrick studied with Dr. Ross at the Evans Memorial during the latter half of 1953. The Board of Directors voted favorably on the recommendation.

With regard to the procedure of licensing by the Atomic Energy Commission, it is necessary that a separate license, to be renewed annually, is obtained for each individual isotope, and in some instances for different uses of the isotopes, namely diagnostic or therapeutic. The request application for radioisotope procurement is made on Form AEC-313 (Rev. March, 1951). The actual license is assigned to an

individual rather than to an institution, but the qualifications usually restrict the activities of the individual to specified institutions. For example, separate licenses have been obtained to permit use of P32 therapeutically at the Tumor Clinic of the Maine General Hospital and at the private office of the writer, and to permit diagnostic use of radioactive iodine (I131) in uptake studies at the Maine General Hospital. To date, we have not applied for permission to use I131 therapeutically in the treatment of hyperthyroidism.

The isotopes may be obtained from a number of sources, including the U. S. Atomic Energy Commission itself, Tracerlab in Boston and the Radioisotope Division of Abbott Laboratories located in Oak Ridge, Tennessee. At present, all our materials are obtained from Abbott Laboratories, in view of their excellent set-up for giving immediate delivery of the isotopes in an unusually safe, compact and ready-to-use form. With reference to prices and costs, an 80% reduction of usual catalogue price is obtainable for those isotopes to be used in the study and treatment of cancer. This price reduction is made possible by completing an AEC Form entitled "JUSTIFICATION FOR CANCER ISOTOPES REQUESTED" and a "STATEMENT OF USE" form which is to be attached to each original AEC-Form 313. If the AEC passes favorably on this request, they issue an instruction to the distributor in question to furnish the named isotopes at an 80% reduction. For the past two years we have obtained our supplies of P32 at this price reduction for the treatment of chronic leukemia and polycythemia vera of our Tumor Clinic patients, both these conditions being "acceptable" by the AEC for said price reduction, this in spite of the questionable relationship of polycythemia to cancer.

From a clinical standpoint, we have employed P32 routinely in the treatment of polycythemia vera. At present, the P32 is administered only by intravenous route, the usual first dose being 3-4 millicuries. Subsequent treatments are given at 3-6 month intervals if necessary, using dosages varying from 2-5 millicuries, the dose to be determined more by the initial response rather than to the individual degree of polycythemia. Two patients have been treated once, two twice and six three to four times. Since the life of the average red cell is one hundred and twenty days, it may take three to four months to evaluate the total response in an individual case. As with irradiation therapy, the level of the white blood cell count is the limiting factor as regards dosage. To date we have had no complications and no instances of irradiation

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** To date the Soroptimist Club have contributed more than \$2,000.

tion sickness. Again as with X-ray irradiation, the great danger lies in the possibility of overwhelming temporary or permanent damage to the hemopoetic systems, with subsequent laboratory and clinical agranulocytosis, and aplastic anemia. From a health hazard standpoint, P32 is quite safe to handle in view of the emanations being limited entirely to beta rays (which are really Electrons) with a limited spread in air and a 5-7 mm. spread in most soft tissues of the body.^{1,2} The limited penetrability of the electron is well known. Following administration of the P32, the syringes and needles are rinsed in running water, by a different individual each time, and then permitted to stand in a designated part of our radioactive isotope laboratory until there is negligible effect as determined by some type of laboratory monitor or radiation survey meter. (At M.G.H. a TRACERLAB SU-38 Laboratory Monitor is used with a TGC-1 G-M tube. This instrument is equipped with 3 full scale ranges of 200, 2,000 and 20,000 CPM.) Since the half-life of P32 is 14.3 days, any given amount will lose fifty per cent of its original activity in a two-week period. It is possible, of course, to determine on a predictable basis the exact amount of activity by using any of the readily available Decay Tables, as long as the precise original activity is known.

The well known affinity of the thyroid gland for the iodine molecule makes possible a quantitative determination of thyroid activity by studying the uptake of the molecule by the gland in a given period of time. Since this can be determined accurately by measuring the amount of gamma irradiation (I131 gives off both gamma and beta rays) over the gland, the amount of "activity" or "iodine molecule concentration" may be reckoned by comparing the 24-hour activity with the original activity. Naturally, the smaller amount of irradiation effect there is, the safer is the procedure. Most clinics found it necessary to use from 100-150 microcuries even when using high efficiency tubes, as the TRACERLAB TGC-8 small high efficiency gamma geiger

tube. This year we have taken advantage of the more sensitive scintillation detectors and have equipped our apparatus with a TRACERLAB P-20M Medical Scintillation Detector which permits us to make uptake studies using as small a dose as 50 microcuries of I131. The efficiency obtained by this detector permits a counting rate at 15 cm. from 1 microcurie I-131 of approximately 520 CPM for 1/2" D x 1" crystal and approximately 2000 CPM for 1" D x 1" crystal.³ We have been able to use our original autoscaler (TRACERLAB SC-1B autoscaler) with this P20-M Scintillation tube by having a special "booster" added to the power line of the autoscaler. This was done by TRACERLAB at a very nominal cost. The carrier-free SODIUM RADIO-IODIDE (I-131) is obtainable from Abbott Laboratories in a very convenient, accurately standardized color-coded diagnostic Capsule. These are so calibrated that the Wednesday after arrival they will contain 12.5-25-50 microcuries. The advantage of the capsule technique is realized when there is no measurement of solutions, no chance of spilling and the patient cannot fail to receive the entire calculated dose. Ordinarily a week's supply is sent in a tightly stoppered vial which does not require shielding. The thyroid of the patient can be compared directly with a capsule containing a duplicate of the administered dosage activity. Our program is so regulated that patients will be present at the Radioisotope Laboratory at 10:30 Monday mornings. At this time the capsule is given to the patient (Figure #3), it having been removed from the tightly stoppered vial and placed in a Lily cup. Twenty-four hours later the same patient returns to the Laboratory to have the uptake measurement made. Figure #1 shows our technician, Mrs. Robert L. Charlton, removing the I-131 capsule from its vial and placing it in a specially constructed leucite container (obtainable from Abbott Laboratories) which has been so made that the capsule is contained at a distance from the end of the measuring tube similar to that of the average



Fig. 1

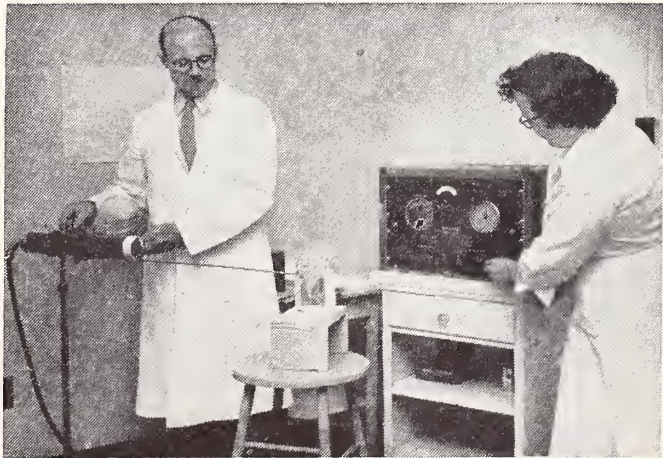


Fig. 2

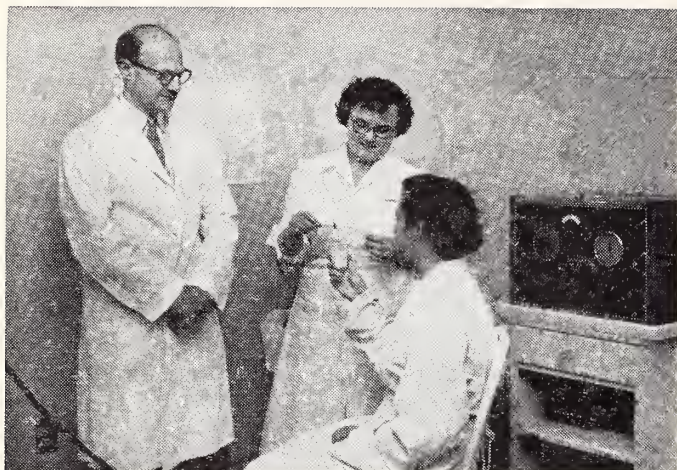


Fig. 3

thyroid gland in the neck. This makes possible the measurement of activity of the original capsule (Cf. Figure #2), or similar one, for the purpose of comparison with the measured uptake by the patient's gland, as seen in Figure #4. Although I-131 gives off both beta and gamma rays, the latter being quite comparable to X-rays in their physical characteristics, the measurement is entirely limited to the gamma rays, because of the technical advantage that they travel farther in air and hence can be measured more easily. The percentage of uptake of activity is compared with the known limits for the hypo, the euthyroid and the hyper state. One of the greatest sources of error lies in the previous administration of the iodide molecule, either in an inorganic state, as in Lugol's solution, or in many cough preparations, or in an organic state as in Diodrast or any of the iodine containing compounds used in the X-ray study of the gall-bladder, kidney, bronchi and subarachnoid spaces. It is therefore important, that the physician referring the patient should also be prepared to send along such information as he may have concerning these compounds. The patient should come to the Laboratory (Radioisotope) in a fasting state. Present concepts indicate that the uptake finding be used in conjunction with the BMR and clinical condition to help evaluate the thyroid status in a given patient. It is conceivable that the uptake study, because of its

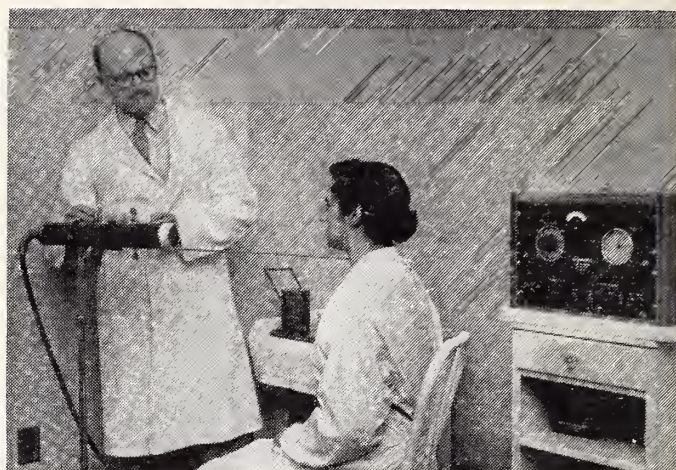


Fig. 4

greater accuracy and specificity, will take the place of the BMR determination, but it most certainly will never replace clinical evaluation which is still the most reliable and dependable guide.

If sufficient interest and confidence is shown in the coming year, an effort will be made to obtain permission to use I-131 in a therapeutic manner. As mentioned previously, however, at the present time the Radioisotope Committee and the members of the Radioisotope Department feel that a conservative approach to this problem will lead to fewer heartaches and headaches in the future. This is especially true in view of the expressed feeling of some of our leaders in the surgical field that insufficient time has elapsed to permit a reliable evaluation of the hazard and potentiality of development of neoplasm in a gland treated with radioisotope techniques, to say nothing of the long range influence on other organs or tissues including the male and female germinative cells. Suffice it to say, at the present, at least, no deleterious influences have been unearthed.

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"SLIPPED ELBOW" IN CHILDREN

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The condition which is known as "Slipped Elbow" is not a new condition. Hippocrates is said to have spoken of it⁷ and written literature on this condition may be traced back to 1671 when Fournier⁴ first described it, and again in 1751, when Duverney⁷ wrote on the matter. It is noted in reviewing the literature, that there appear to be periodic episodes of papers describing this lesion. It is also to be noted that each of these episodes, if the writers⁶ are to be believed, seems to occur at a time when the condition appears to be forgotten by most of the textbooks and medical school professors of the day. Such a period has again arrived in the cycle of human events as a review of many of the present day Orthopedic Texts or the questioning of Interns and younger Practitioners will amply reveal.

NOMENCLATURE

A number of terms^{2, 3, 5} have been applied to this condition. Among the more common are: Gromyrs Injury, Painful Paralysis of the Arm in Young Children, Dislocation of the Head of the Radius by Elongation, Pulled Elbow, Dislocation of the Head of the Radius Downward, Subluxation or Traumatic Subluxation of the Head of the Radius, and Nursemaids Elbow.

MECHANISM OF INJURY

The mechanism of injury is most important. In this condition, the history of the method of obtaining the trauma is almost completely diagnostic. The pertinent point in this history is that the injury came about when the child's arm was suddenly pulled on while extended. Immediately following this action, the child will begin to scream in pain and refuse to use the arm. The elbow will be held in moderate extension and the arm at the side, with the forearm in pronation. The arm may or may not be splinted by using the opposite hand to support it. If the child is old enough to talk it will complain of pain about the elbow or on occasion of (referred) pain at the wrist.⁵ The pain is not specific for any one portion of the elbow although occasionally there will be point tenderness over the head of the radius. The lesion resembles the picture of a Brachial Palsy injury and has frequently been mistaken for it.² The traumatic action, however, is rarely forceful enough to warrant such a differential and usually occurs with such everyday actions as lifting a child from the floor by one hand, pulling a child from under a table, helping a child up a curb or the steps of a bus. Most frequently the action is instituted by the child's parents

or perhaps by one of its playmates. Two case histories are herewith presented to demonstrate these points.

AUTHOR'S CASES

Case 1. A. P. Female, Age 3.

A. P. was noted by her mother to be sitting on the ground when a playmate grasped her outstretched hand and "yanked her to her feet." The child screamed in pain and continued to cry after some time had elapsed. She refused to use the arm thereafter holding it splinted at her side. The child was seen by the author about two hours after the incident. At that time there was no visible evidence of injury except for voluntary restriction of motion and the subjective complaint of vague pain about the elbow. Comparison films of both elbows failed to reveal any abnormality. Manipulative reduction was carried out and on completion of the maneuver—the child ceased crying, and exhibited voluntarily a full range of painless motion. No immobilization of any form was used and followup conversations reveal that the child has had no evidence of recurrence.

Case 2. E. B. Male, Age 4.

E. B. had been behaving badly at a bus stop. On entering the bus, the irritated mother grasped the boy by the right hand and lifted him over the rather high inner step of the entranceway. Following this the child screamed and held the arm splinted at his side. He refused to move the arm and complained of vague pain over the elbow. On arrival at home the mother took the child to her family physician who referred the patient for examination and treatment. Physical findings about the elbow were nil except for pain over the radial head and voluntary limitation of motion. Comparison films failed to reveal evidence of abnormality. Manipulative reduction was carried out and in a few moments the child exhibited a full range of elbow motion without pain. The child was discharged without immobilization and followup conversations revealed no recurrence after 5 months.

INCIDENCE

Various writers credit this lesion with a reasonable frequency among their cases. Figures range from 1 to 3% of all children's injuries^{7, 3, 6} under the age of 8 years. The average age of occurrence is between 2 and 4 years.^{3, 6, 7} On the other hand, these figures represent only averages and the lesion has been reported in children as old as 9 years of age.⁶

ANATOMICAL CONSIDERATIONS

The apparent age limit on this condition suggested early to investigators the existence of a possible ana-

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tomical basis for its occurrence. Various theories were proposed, but it remained for Stone⁸ in 1916 to put forward a theory, based on anatomical experimentation, which seems to have withstood the test of time. Briefly, his theory is that with the pull on the hand or arm, the radius moves distalward, and the annular ligament allows some of its fibers to slip over the head of the radius without apparent tearing of the ligament. If the reader will refer for a moment to any standard textbook on anatomy, he will find that the growth pattern of the head of the radius is unique. He will find that the typical flared head of the radius, as illustrated by the adult form of the bone, does not start its formation until about the age of 5 and does not really obtain any degree of flare until about the age of 8 or 9 years of age. Keeping this in mind and remembering the laxity of some children's joint structure, it is very easy to see how the annular ligament may be displaced in part without tearing.

CLINICAL PICTURE

As seen by the examiner, the child usually presents himself with the arm held at the side, with the elbow in 15-20° of flexion and the forearm in pronation. Attempts to get the child to move out of this position usually fail. The child may possibly complain of pain at its wrist⁵ due to referred pain, but pain is usually complained of in the elbow region. This elbow pain may be vague and diffuse or may be well localized to the radial head. No swelling, ecchymosis, hematomas, bony protrusion, deformity, or true paralysis will be noted. Motion at the shoulder and motion of the fingers will be found to be normal. Normal sensation and vascular pulsation is the rule with no known exceptions. In short, the examiner has a child complaining of pain in its elbow without any significant findings except for a voluntary restriction of motion, particularly supination, and some evidence of tenderness about the joint.

X-RAY FINDINGS

The X-ray in this condition is negative. It is also to be noted that the radial epiphyseal center of ossification may not be visible in the younger children. When present, however, there will be no discernable discrepancies between the injured and the normal side if comparison films are taken. This fact should not cause consternation, but rather should be added to the picture as a diagnostic aide. The negative film is a definite criteria in the making of this diagnosis.

TREATMENT

Treatment of this condition is a simple matter and any adequately informed physician or surgeon should be able to carry it out. Its simplicity is demonstrated by the fact that one author² even permitted himself to the luxury of a telephonic diagnosis and on instructions to the mother on the manner of manipula-

tion achieved a satisfactory reduction by "Telephonic Therapy."

Two primary methods of reduction are favored. Each, however, is basic in its application. One consists of grasping the elbow with the thumb of the hand over the radial head. With the other hand the wrist is grasped and the forearm is supinated and extended while the thumb makes pressure over the radial head. The second consists of carrying out the same maneuver after flexing the elbow to from 75 to 90° of flexion. The actual position at which the click of reduction is felt cannot be adequately predicted. I personally prefer a third method which combines all the features of both of the above methods. It is started, as in the first method mentioned above, with the hands in the same position. Then the forearm is rotated gently and continuously from pronation to supination in full while at the same time the elbow is gently worked through a full range of flexion and extension. At some point between full extension and 90° of flexion a distinct click of reduction will be felt. This will usually be while the arm is in full supination and this should be strived for. Frequently the reduction will be accomplished in the first movement. The motions should be carried to the full range at all times and gentleness is the keynote of success in handling. Ordinarily this lesion requires no force to overcome the mild voluntary resistance of the child.

Some authors³ state that following this the child should have the affected arm placed in a sling for from 5 to 7 days. I have not done this and to date I have had no recurrences. As far as most authors are concerned, however, recurrences do occur infrequently^{2, 5, 6} and the parents should be warned of this with an explanation of how the injury is obtained. Authors who report recurrences,^{1, 2} state that the application of a cast or splint to immobilize the elbow for a period of 3 weeks is sufficient to allow for stabilization of the joint and prevention of further recurrence.

COMMENT

It is noted that some authors feel that this condition belongs in the realm of the Orthopedic Surgeon and that the Orthopedist alone should treat it. As an Orthopedic Surgeon I can heartily agree with this opinion. However, it comes to mind that many physicians do not live in a large Medical Center City where an Orthopedist is just a few minutes away around the corner, or down the hall of the local Professional Building. For many communities, the Orthopedic Surgeon may be fifty miles or more away. It hardly seems reasonable to subject a young child with a painful lesion to the necessity of a long terror filled ride to see a specialist for the treatment of a lesion which requires only seconds to correct. Particularly when as already explained, its treatment is so simple that a housewife may be taught the treat-

ment over the telephone. No form of telephone therapy is recommended by this author for anything and this idea is condemned. Any attempt to have housewives treating by telephone direction, screaming children with dangling arms that have not had proper medical examination and X-rays to rule out the possibility of more serious conditions is negligence almost to the point of criminality. Any practitioner guilty of this deserves his embarrassed position both professionally and legally. A review of the differential diagnoses will reveal that practically any of the more serious elbow injuries may simulate in part the picture described. Laxity therefore may lead to the crippling of a child's arm for life due to unknown circumstances surrounding another type of injury.

SUMMARY

1. The condition known as "Slipped Elbow" in small children has been described and two case histories have been presented to demonstrate the typical picture.
2. The diagnosis is easily made on the following pertinent points:
 - a. The history—a sudden pull on the extended arm.
 - b. The clinical picture of the arm hanging at the side with the elbow flexed at 15-20° and the forearm in pronation.
 - c. Pain may be in the elbow or referred to the wrist.
 - d. There may be acute tenderness over the head of the radius.

- e. All motions may on occasion be carried out reasonably painlessly with the exception of supination.
- f. No deformity is noted externally.
- g. X-rays are to all intents and purposes completely negative.
3. The author believes that this condition can be successfully treated by any doctor in communities where no Orthopedic Surgeon is available. Before treatment is given however, personal examination of the patient and X-rays should be taken to rule out the possibility of more serious injury.

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THE DRUG OF CHOICE IN AMEBIASIS*

The drugs that are in widest use in the treatment of amebiasis today are the following:

1. Antibiotics: Aureomycin, Terramycin and fumagillin.
2. Iodoxyhydroxyquinolines: Diodoquin, Vioform and Chiniofon.
3. Arsenical: Carbarsone.
4. Bismuth-arsenic: Milibis.
5. 4-aminoquinoline: chloroquin.
6. Alkaloid: Emetine.

The use of antibiotics began in 1949 when McVay and his colleagues discovered the usefulness of Aureomycin in amebiasis. At that time satisfactory but not total rates of cure had already been obtained with Carbarsone, Diodoquin, Vioform and Chiniofon. The effectiveness of antibiotics cannot be denied, but their limitations are equally apparent to the critical observer. For example, most physicians have

observed side effects which are sometimes severe and surprisingly persistent following discontinuance of the drug.

The initial enthusiasm following the results of short term study of these drugs was somewhat tempered as recurrences were detected among the patients followed for four or more months. With any drug used in treating amebiasis, a relapse rate of 10 or 20 per cent is usually found when cases are followed adequately.

The latest antiamebic product of the mold is fumagillin, which is amebicidal in vitro in extremely high dilution. It produces undesirable, although not serious, side effects, and the rate of cure is high, but not total.

How do the iodoxyhydroxyquinolines compare with the antibiotics? Out of 152 adult patients treated with Diodoquin by the author, 16 (11 per cent) showed positive stools at some time after treatment. Six of these 16 cases, however, had inadequate doses

* K. G. Dwork: *American Journal of Gastroenterology*, 22:152 (Aug.), 1954.
Abstract from JAMES F. FLEMING, M. D.

BLADDER DYSFUNCTION FOLLOWING EXCISION OF THE RECTUM

GEORGE F. SAGER, M. D., and DONALD F. MARSHALL, M. D.*

Difficulty in voiding following an abdomino-perineal resection is a frequent complication. It is so frequent in the experience of many surgeons as to be thought of as the routine postoperative course. However, it is serious enough to be considered a true complication of extensive mobilization or excision of the rectum. Whether the operation is a Miles type abdomino-perineal resection, a posterior proctectomy, or a pull-through procedure does not appreciably alter the incidence of this complication. It is somewhat less frequent in anterior resections with mobilization of the rectum without its complete removal. Bacon and McCrea¹ of Philadelphia state that only about 2% of their patients have significant bladder dysfunction, whereas Barnes of Los Angeles believes the incidence is about 50%. Victor Marshall² found that at the New York Hospital, $\frac{1}{3}$ of all males undergoing radical resection of the rectum would have significant urinary difficulties, and that without specific treatment $\frac{1}{3}$ of these would persist beyond three months.

TYPES OF DIFFICULTY

The bladder difficulty may vary from one patient to another, or the same patient may start with one type of problem and change to another a few weeks later. It is common practice for the patient to have an indwelling urethral catheter during the immediate postoperative period. It is when this is removed that the bladder problem becomes evident. The commonest problem is complete retention, with distention of the bladder and inability to pass any urine. This should be evident 6-12 hours after removing the catheter and requires re-insertion of a catheter. A similar problem, but one which requires closer observation to detect, is that of overflow incontinence. In this situation the patient's bladder is full to capacity and overflows urine frequently in small amounts of 30-50 cubic centimeters. Simple investigation will prove that he is not voiding normally and that additional catheter drainage is necessary. A third problem is that of a large residual urine. This patient clinically will be voiding normally in adequate amounts. However, he is not emptying his bladder with each voiding and retains from 100 to several hundred cubic centimeters of urine at all times. A high residual will lead to infection of urine and can be detected only by catheterization after the patient has voided. Before symptoms of cystitis develop, a high degree of suspicion is necessary to detect incomplete bladder emptying. Other types of bladder dysfunction may be found such as difficulty in voiding

requiring straining to void, suggestive of bladder neck obstruction.

THEORIES OF ETIOLOGY

What is the etiology of these urinary problems? Several explanations have been set forth, but no one of them has been universally accepted as the single responsible factor. One theory is damage to the autonomic nerve supply of the bladder at the time of rectal mobilization. This theory is ardently supported by Bacon and McCrea¹ of Philadelphia who believe it is all the explanation necessary for most cases. They cite the typical neurogenic bladder curve obtained when cystometrograms are done on all patients postoperatively. Another similarity is the changes in the dome of the bladder seen with cystograms and at cystoscopy. This theory has several opponents and one of the strongest is Victor Marshall of the New York Hospital who cites experimental work showing that anatomical division of the autonomic nerve supply of the bladder produces little or no effect upon its function.

Another factor has recently been suggested not as a *sine qua non* but as a contributing factor. Campbell and Gislason³ of Philadelphia describe a pericystitis involving the base and posterior wall where the bladder has been dissected free from the rectum. This inflammation is sterile and probably a result of the trauma of dissection. It stiffens the involved wall of the bladder greatly reducing its emptying ability and in fact produces a cystometrogram resembling neurogenic bladder. This is a temporary process which resolves itself in seven to ten days.

Relative alterations in the pelvic viscera subsequent to rectal resection have been considered an important cause of the postoperative bladder trouble by Marshall, Pollack and Miller² of New York, and Watson and Williams⁴ of London. After the levator ani muscles are resected and the pelvis emptied of rectum and sigmoid, the bladder drops back into the empty space. "The external sphincter within the triangular ligament, as usually described especially in males, is essentially an iris mechanism. If one portion of this muscular iris were pulled out of alignment, closure would be imperfect. Further, the more the alignment is disarranged, the less likely is adequate closure possible—even without any paralysis. If the bladder, bladder neck and prostate sag from lack of fixation, a pull may arise which could alter the arrangement of the external sphincter. If, however, the prostate remained well fixed, and the bladder sagged, most of this pull would be on the fixation structures of the prostate: the pubo-prostatic ligaments and the levator ani mainly. Also such con-

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dition would not disarrange the alignment of the external sphincter mechanism. Thus the presence of a large cystocele does not necessarily indicate inadequacy of the external sphincter; but if there is a cystocele and the posterior urethra sags also, the likelihood of poor external sphincter control is great. If there is a cystocele and good support of the bladder neck, retention might occur from mechanical obstruction thus produced.”²

Finally, the theory which is gaining more adherents is that of vesical neck obstruction. The vast majority of post-operative voiding problems arises in elderly males who may have signs and symptoms of mild prostatic obstruction preoperatively if a search is made for them. And many of those who give no findings of urinary trouble can be considered to have pre-clinical prostatism, or compensated vesical neck obstruction. These patients go to the operating room with mild prostatic obstruction which has been compensated by an increase in the strength of the detruser muscle of the bladder. At operation, the efficiency of the detruser action is compromised either by autonomic nerve damage or by traumatic aseptic pericystitis, with the result that the urinary stream no longer can be forced by the obstruction at the neck. This theory seems to have the most universal application.

MANAGEMENT

The management of postoperative bladder dysfunction entails preoperative evaluation, and post-operative surveillance with early urologic consultation after two or three unsuccessful attempts at normal voiding. Urinary trouble should be anticipated after any operation involving mobilization or complete excision of the rectum. All males being prepared for resection of the rectum should have careful evaluation of their urinary systems. The history should include specific information relative to the patient’s voiding, and symptoms of prostatism frequently will be found. The prostate should be examined carefully at the time of the digital rectal examination. If the primary rectal growth is palpated, it may capture the attention of the examiner to the extent of forgetting the prostate. But we should remember that once the rectum has been removed, the opportunity for digital examination of the gland is gone forever. Urinalysis can be assumed to be routine, and X-ray films of the abdomen should be inspected for the occasional bladder calculus. Cystoscopy is not necessary as a routine procedure preoperatively, but can be reserved for the patients with hematuria or symptoms suggesting bladder invasion. And finally all male patients should have a determination of residual urine. Since an inlying urethral catheter at operation should be routine this can easily be accomplished at the time the catheter is inserted before operation, and the patient should stand to void before being catheterized.

Postoperatively the catheter should remain in place for 7-10 days. It should be removed early in the morning and the patient catheterized for residual in about twelve hours. If this is greater than 100 c.c. the catheter should be left in for one or two more days and the procedure repeated. After two or three unsuccessful attempts to void, or to reduce residual urine, the patient should be cystoscoped to determine if vesical neck obstruction is present. If this is found, a prostatectomy should be considered seriously. Although the operative approach will vary somewhat with the operator’s choice, in general the small to medium size gland will be removed transurethrally, and the large gland via the suprapubic or retropubic route. If no significant neck obstruction is found, further drainage, or tidal drainage may be necessary. Occasionally, such a problem will persist, and after three months if no obstruction is found, the cause is probably a male cystocele and anterior suspension of the bladder should be considered.

FREQUENCY OF THE DYSFUNCTION

In order to evaluate the frequency of bladder dysfunction following excision or extensive mobilization of the rectum at the Maine General Hospital, the records of patients having major operations for carcinoma of the rectum in the past six years were reviewed. Forty-seven records were complete enough for study and are summarized in Table I.

TABLE I

Bladder dysfunction in patients having resection or extensive mobilization of the rectum

Total	47
Male	25
Bladder dysfunction	16
Corrected with longer drainage	9
Prostatectomy, early	6
Prostatectomy, late	1
No urinary difficulty postoperatively	7
Urinary difficulty from other complications	2
Female	22
Bladder dysfunction	7
Corrected with longer drainage	5
Discharged with catheter	2
No urinary difficulty postoperatively	15

It was decided arbitrarily to consider as bladder dysfunction the inability to void normally after the initial removal of the indwelling catheter. This complication occurred in 50% of the patients studied, and twice as often in men as in women. In other words, two-thirds of the males and one-third of the females in this series had bladder dysfunction. Of the seven females with this complication, five returned to normal after repeated catheterization, or after a longer period of constant drainage, and the other two were discharged to nursing homes with the catheters in place for reasons not apparent in the records. However, only about half of the males with this complication responded to longer catheter drainage, the other half requiring some type of pros-

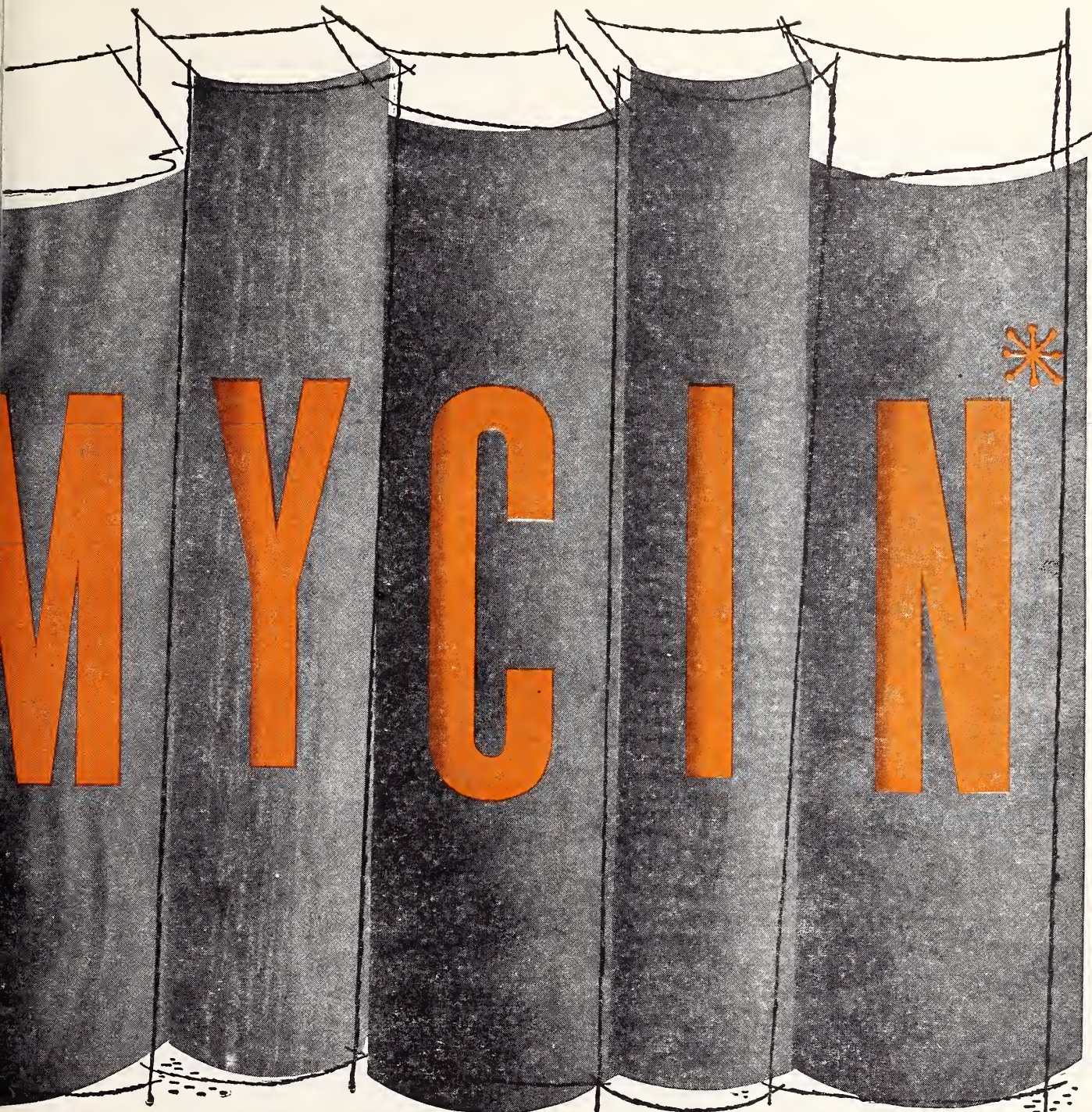


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tatic resection. Six prostatectomies were performed before discharge from the hospital, and an additional one was done two years later for urinary difficulties dating back to the original abdomino-perineal resection. All had satisfactory bladder function after prostatectomy. One patient had had prostatectomy four years before his abdomino-perineal resection, and he had an entirely normal post operative course. The problem of a male cystocele without bladder neck obstruction was not encountered in this series.

SUMMARY

1. Bladder dysfunction following resection or extensive mobilization of the rectum is a frequent complication, occurring in two-thirds of the males and one-third of the females in our series.
2. The theories for the occurrence of this complication are described.
3. The cause which best explains the cases in our series are pre-existing mild vesical neck obstruction with superimposed autonomic nerve disturbance, pericystitis or posterior displacement of the bladder.

tion with superimposed autonomic nerve disturbance, pericystitis or posterior displacement of the bladder.

4. Careful evaluation of the prostate, and bladder function preoperatively is urged.
5. Most patients not responding to a week or two of additional catheter drainage will do well following prostatectomy.

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The Drug of Choice in Amebiasis—Continued from page 295

of the drug. The cure rate with Diodoquin was, therefore, over 90 per cent in adults. Similar results were obtained with 57 children. The author's impression is that Diodoquin is the most dependable of these quinoline compounds, and that Vioform is somewhat more effective than Chiniofon.

The choice in any given case should be dictated by such considerations as previous failure of a given amebicide, history of sensitivity, severity of symptoms, presence of hepatitis, necessity for rapidity of treatment, certainty of diagnosis, and the financial status of the patient.

In choosing a drug one should not prescribe any of the "mycin" antibiotics for the patient who has a history of nausea, vomiting, diarrhea, abdominal pain, or anal pruritus following his previous use of that drug. For general use, Diodoquin is a good amebicide, and does not usually cause side effects. Milibis is a satisfactory general amebicide although the failure rate in children seems to be high. Treat-

ment with Vioform results in a higher incidence of gastrointestinal symptoms. Fumagillin is a potent amebicide and its exact place in the scheme of treatment must await continued evaluation. Aureomycin and Terramycin are effective amebicides but their use is attended with a high incidence of undesirable side effects and they are expensive. Terramycin may be the more efficient of these two.

In broad perspective, perhaps most of the cases seen in this country will best be managed with a course of Diodoquin or Carbarsone. A certain number will do well on fumagillin, Terramycin or Aureomycin; or with penicillin or sulfasuxidine followed by Diodoquin in sicker patients; the seriously ill cases should be given emetine either before or concurrently with the standard amebicides.

For amebic hepatitis, chloroquin is employed. One of the standard drugs efficient against intestinal amebiasis should always be given concurrently or after completion of the course of chloroquin.

THE VALUE OF X-RAY IN THE DIAGNOSIS OF TUBERCULOSIS

JACK SPENCER, M. D., Portland, Maine*

Roentgenological examination of the chest will reveal the presence of tuberculosis and other types of pulmonary pathology, but often it is difficult to determine the exact pathological nature of the radiographic changes.

The small photoroentgen film is adequate to indicate the presence of an abnormality. However, the large 14 x 17 inch radiograph plus fluoroscopy and various projections are often necessary to further identify the detail pathology to aid in establishing a specific pathological diagnosis. Since large numbers of the population have survey chest examinations annually, an increasing number of small minimum lesions are discovered where it is admitted that laboratory and clinical findings are often absent or inadequate to help in early diagnosis. In this group where basic criteria for the determination of the clinical significance of the minimal lesion have not been established, it has become an increasingly frequent custom to attempt to make a working or clinico-pathologic diagnosis from the film for the purpose of proper disposition.

When a tuberculous lesion is discovered by radiographic examination, only the character of the infiltration can be estimated from the films:—namely,

- I. exudative
- II. productive and fibrotic
 - A. nodular
 - B. strand-like linear densities
- III. exudative and productive
- IV. fibro-calcific form

The variation in the individual observer is often not appreciated. If a set of films is read by two different observers, the likelihood is that in 16% of the cases the two readers will disagree with each other as to whether or not a lesion is present and if the same observer re-reads the same set of films he is likely to disagree with himself in approximately 8% of the cases. Garland, in a group of 100 selected cases, had a group of five Radiologists and chest specialists study the films. He found a 9 to 24% variation in the interpretations and a 3 to 31% personal variation when the same observers re-read the same films.

METHODS OF APPROACH

Once a radiological lesion has been identified, as in any diseased condition elsewhere, routine general diagnostic procedures are applied in the same fashion as they are in any study. Dr. Francis Williams, one of the first American Radiologists, early realized the dangers of overemphasizing the radiograph. He

pointed out the proper procedure:—First to make a proper and complete radiographic and, when indicated, fluoroscopic examination and to record the findings; *secondly to have available a complete history, physical examination and other laboratory data*; finally with all the facts available to arrive at a logical conclusion or, when possible make a diagnosis.

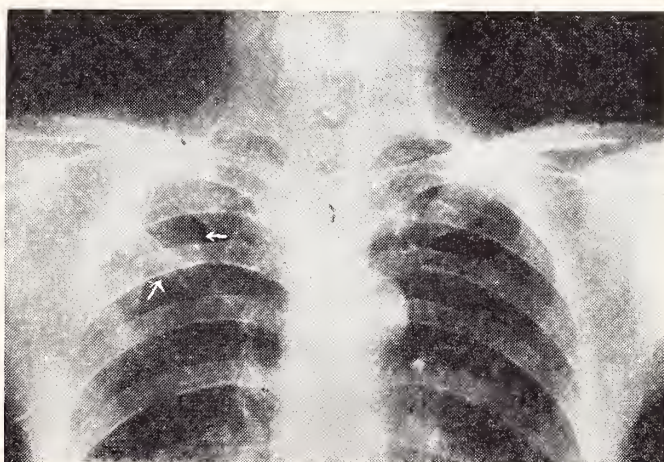
Today in addition to the Radiograph, history and physical examination, we have readily available cytologic studies of the sputum, bronchoscopic and bronchographic examinations as well as other diagnostic procedures. Exploratory thoracotomy and biopsy of the lesion now has come to be an accepted procedure when all other diagnostic tests have failed to establish the nature of the disease. With the many advances developed in the technique of chest surgery, this procedure now carries about the same risk as an exploration of the abdomen.

No longer can we make a diagnosis of tuberculoma of the lung and wait to see what happens for about 50% of this type of lesion will be carcinoma. *Case I* illustrates a small apical lesion which was thought at first to be a tuberculoma. Four years after first seen, radiographic examination revealed an obvious carcinoma of the lung. *Case II* is an illustration of chest pathology which required, after careful study and follow-up, surgery to determine the true nature of the lesion.

CASE I

History: White Male. Age: 66.

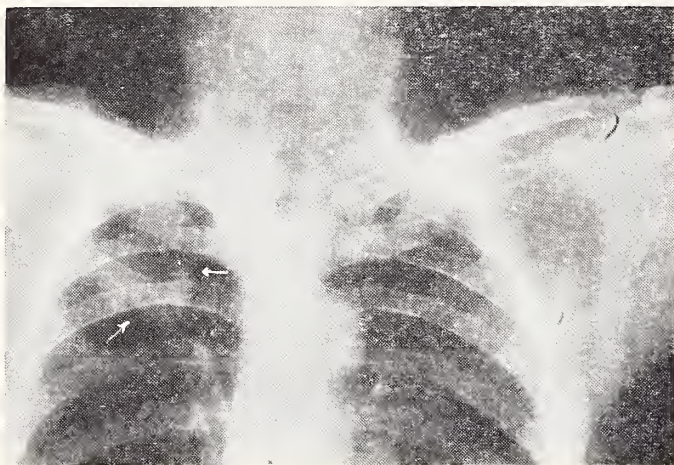
Radiograph of the chest was taken in 1948: (Fig. 1) Which showed a small fibrotic lesion at the right apex considered to be healed tuberculosis. Repeat film was taken in 1949, no change. Patient did not return for check-up until January, 1952, at which time a bronchogenic carcinoma was demonstrated



Case I. Fig. 1. Nodular lesion in right first interspace anteriorly. Advised to follow as possible healed tuberculosis.

*Chief of Roentgenological Service, Maine General Hospital.

(Fig. 2). Bronchoscopy: negative. No tumor cells found in smear obtained from the bronchoscopy. February 2, 1952 — a right upper lobectomy was done. Surgical specimen revealed a bronchogenic carcinoma, squamous cell type, Grade III, attached hilar lymph nodes not involved by tumor. Patient had last radiograph November 17, 1953, which showed no evidence of recurrence.



Case I. Fig. 2. Film taken four years after Fig. 1. Lesion enlarged and has the appearance of a bronchogenic carcinoma.

CASE II

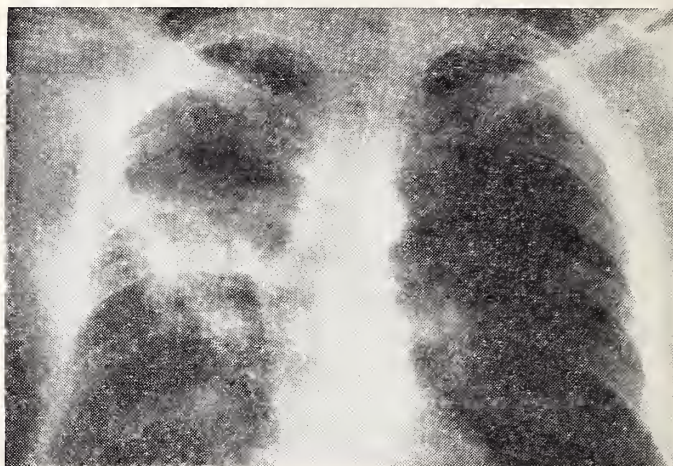
History: White Male. Age: 49.

Transferred from another hospital with a lesion demonstrated by radiograph. One and a half years ago the patient was said to have had double pneumonia from which he recovered and returned to work, since then he has had a progressive increase in cough which has been productive. Had admission X-rays at this hospital and thought to be inflammatory in nature with carcinoma as second choice (Fig. 3). Planograph revealed a solid mass with an abscess formation and evidence of bronchial occlusion. No

tumor cells found. No acid-fast bacillus found. Right pneumonectomy was done, surgical specimen revealed a lung abscess, with chronic pneumonitis, and active fibrocaseous tuberculosis.

SUMMARY

With the advent of mass radiographic surveys of the chest using photoroentgen films, a relatively large



Case II. Fig. 3. Patient followed with right pulmonary pathology which appeared to be chronic inflammatory but carcinoma could not be excluded. Surgical specimen revealed lung abscess, chronic pneumonitis and active fibrocaseous tuberculosis.

segment of the population is studied. The method is a survey to detect most chest abnormalities. The local physician is then faced with the follow-up and also the advising of the patient as to the importance of adequate clinical studies and treatment.

The radiographic diagnosis is often a working diagnosis made to initiate further clinical, laboratory and follow-up studies. We cannot now make a radiograph diagnosis of tuberculoma and wait to see what happens. Such a lesion today calls for prompt action and study by the chest surgeon.

THE PRESIDENT'S PAGE

Progress is slowly being made to bridge the misunderstanding that apparently exists between the medical profession and the Associated Hospital Service of Maine.

There are a few points of difference, however, that I would like to speak to you about this month.

The board of directors of the Associated Hospital Service of Maine is made up predominantly of laymen who are outstanding in their respective fields of endeavor, but who cannot understand the medical problems because they have not grown up in the profession as we have. A good example is their inability to grasp the fact that the patient will receive better care when under the direct treatment of his personal physician than he will if his physician is employed by a hospital on salary or commission.

Approximately one out of five members of Blue Shield are under income, which means that we are allowed to bill four out of five members over and above the fee allowed by Blue Shield. We physicians are attempting by Associated Hospital Service to cover those people who cannot afford either their unexpected hospitalization or medical expenses. The feeling of the board of directors, however, is that for many, apparently sound financial reasons they cannot sell to the majority the protection they really need. The under income group, because of frequent changes in employment or frequent periods of unemployment are in and out of Blue Cross and Blue Shield.

It is also the unfortunate impression of many policyholders that the fee allowed by Blue Shield is the full fee of the participating physician. This is certainly not the understanding agreed upon by the physicians. We do not approve of having our fees set by any insurance group, but conversely we must guard against the use of the insurance as a stepping stone to higher fees.

I trust that with close coöperation between the members of the Maine Medical Association and their Health Insurance Committee that these and other problems will eventually be solved.

WILLIAM F. MAHANEY, M. D.,
President, Maine Medical Association.

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Development of Blue Shield Plan

In the August issue of our JOURNAL, Dr. Belknap expressed his views on "Abuse of Blue Cross and Blue Shield." For conclusion he wrote in part as follows: "We should use extreme care and diplomacy in avoiding misuse of a valuable privilege. Remember the Golden Egg." This reference to the Health Insurance Plan indicated that the operation thereof developed some practices which required careful consideration.

We call your attention, also, to the Report of the Health Insurance Committee as presented by Dr. Mahaney in the June issue. Dr. Mahaney, at that time Chairman of the Health Insurance Committee, had this to say; "This insurance is becoming a more important subject every year and considerable time must be spent in the study of the problem and in keeping up with the changing tempo in the sickness insurance plans."

We would like to comment on Dr. Mahaney's statement that, "this insurance is becoming a more important subject." We can report that on June 8, 1954, Blue Shield contracts were held by 43,827 subscribers in the State, covering 114,413 people. This number represents roughly about one-eighth of our recorded population of 913,774. Approximately, then, one out of eight of our citizens are interested in the Maine Health Plan.

In order to have the plan succeed the subscribers must be assured of good medical care. Good medical care demands coöperation from the members of our profession. And we can report with some gratification that 639 members are at present participants in the plan. The Association lists a total membership of 790, of this total 670 are carried as active practitioners. However, we must assume that some

senior and honorary members not carried as active on our list may be participants in the plan. Therefore, the exact percent of registered practitioners signed up for the plan is difficult to reach. Nevertheless, it is a very high percent.

With the above figures in mind we came to the conclusion reached by our Health Insurance Committee that "this insurance is becoming a more important subject."

Our review has revealed, therefore, a surprisingly large number of patient subscribers and a gratifying percentage of doctor participants. Now, let us turn our attention to the contract offered by Blue Shield. The contract was developed by the Health Insurance Committee in conferences with representatives of Blue Shield. Under the guidance of Dr. Eugene Drake, the committee studied various plans and scrutinized fee tables with the result that a contract was presented to the State Association for consideration. The Health Insurance Committee recommended that the plan be accepted and the insurance became available in December, 1950.

At a meeting of the York County Medical Society, which we had the opportunity to attend recently, Mr. Nellson from the Blue Shield reviewed the contract and answered questions which had been prepared by the members. The questions, which had been typewritten previously, were read by Dr. Stephen Cobb who, at the request of Dr. Charest, President of the York County Society, acted as interrogator. Mr. Nellson displayed not only a thorough familiarity with the provisions in the contract but also a calm and tolerant attitude toward the "gripes" embodied in the questions. He called attention particularly to two factors during the period of questions and

answers; first, that the contract was a coöperative production by the Association and Blue Shield; second, that it was a live contract and could grow with the demands of doctors and subscribers. In other words, he stated that conferences from time to time by the participants in the plan would bring to light certain features which needed changes and adjustments. Already three or four frequently discussed provisions, namely—fees for pre and post operative care by the medical attendant; fees for extra-ordinary and prolonged services in some medical cases; coverage for prolonged anesthesia; coverage for particu-

lar cases requiring X-ray—are under consideration by designated authorities. And, he continued, when the changes are shown to be agreeable to all parties a new contract can be prepared.

We are practicing under changing conditions, conditions which generate fresh problems. Sickness Insurance is one of them. We suggest to County Secretaries that they give some thought to a program similar to the York County Association and recommend enthusiastically Mr. Nellson as a guest at the meeting.

Proposed Legislation

Oftentimes the members of the Maine Medical Association criticize the Officers and House of Delegates of the American Medical Association for delay in action — but subsequent events frequently indicate that the delay is wise and that proposed legislation needs thorough consideration. This consideration consumes a good deal of time but as a result of such time consuming conferences the attitude of the Association is justified. For illustration we publish herewith an editorial from the September 25th issue of *The Indianapolis Star*, entitled "Keep Health Insurance Voluntary," which reverses itself on the proposed reinsurance program, indicating that the processes of examination are often advantageous.

"On the basis of a great deal of additional information given to us by the insurance industry, we are compelled to reverse our past position favoring the Eisenhower administration's health reinsurance program.

"During the past few years several insurance companies have entered the field of catastrophe insurance and now supply policies that cover extraordinary medical expenses at a reasonable cost which the average citizen can pay. Mr. E. A. McCord, president of the Illinois Mutual Casualty Company, has pointed out that his company for instance, provides catastrophe insurance to cover expenses up to \$10,000. It is possible for a man and wife in their 40's with three or more children to get coverage for medical expenses up to \$5,000 for as little as \$93 a year or \$8 a month. Of course the first \$500 of such a catastrophe expense is deductible and must be paid by the insured person.

"Mr. McCord also pointed out that this type of catastrophe insurance is now being written by the insurance industry largely without any private re-

insurance program. The capacity of the industry as a whole to provide this kind of insurance is great and there is no need for the proposed \$25,000,000 government fund for this purpose.

"Certainly there is a widespread misconception in the United States, which we ourselves have shared, that the insurance industry has been either unwilling or unable to provide reasonably priced catastrophe insurance. It has undoubtedly been spread by the strenuous and effective efforts of those favoring a government-controlled health program. The insurance industry's own failure extensively to dramatize its contributions and to capitalize on them with the public is also responsible.

"As we have stated repeatedly in the past, it is a sound principle of government that government should never invade a social welfare field in which private or semi-public agencies are able and willing to provide what is needed. It seems clear that the insurance industry has the capacity and is now showing the willingness to handle this special and long neglected field of catastrophe health insurance.

"The best way to prevent socialized medicine or socialized insurance is to eliminate, through private effort, any need or demand for them and to do so before government gets started in the field. The Eisenhower administration can hardly claim a need for government action if the insurance industry has already taken action without government help. And surely if the insurance industry is successful in selling its catastrophe insurance plans on a voluntary basis to the majority of Americans, there will no longer be any reasonable demand for government action. We hope that happens."

Support Medical Education

Three full years have passed since the organization of the American Medical Education Foundation and the National Fund. Despite the meager interest exhibited by the members of our State Medical Association its members must at least be well aware of the purposes, the philosophy, the *raison d'être* for this nation-wide campaign.

This 1954 year witnesses forward progress for American Medical Education Foundation with 15,800 gifts totaling \$1,023,313.26 for the first ten months against 15,414 totaling \$960,859 for the preceding year. The million dollar figure has been realized in part through the generous gift of \$100,000 by the California Medical Association, plus \$17,230 from the Arizona Medical Association representing a ten dollar dues increase voted for A.M.E.F. by their associations; while Illinois contributed \$163,120 through their original and continuing voluntary plan of including a specified individual gift in annual dues.

Admitting the calls for gifts focussing on the physician from every hand, there are three obstacles to the individual giving to this cause impregnated with peculiar appeal to the doctor. The first obstacle is simple apathy to taking pen in hand to write a check. The second is perhaps the remoteness of the recipient of the funds. The third and probably major obstacle is a misconception with respect to the final disposition of the gift, for it may be reasserted with

firm emphasis that the ear-marked gift finds its way without diminution of principle to the coffers of the designated medical school from which the giver will receive grateful acknowledgement. By this device the total volume of American Medical Education Foundation contributions aggregates the more impressive figure to encourage greater interest and success for the big brother of A.M.E.F., the National Fund, which derives its support from the great industries and corporations of this country. We are told that the first question asked the solicitor approaching industry's representative is "How are the doctors supporting this campaign?"

My own county of Knox has recently made a token contribution from its treasury of \$50.00, the first gift of its kind within the State. I suggest that other county societies follow this fine example. The State Association, a vocative exponent for medical education might well make a special annual contribution to this worthy purpose. But above all I would urge each physician of this association to take pen in hand statim to make his check for \$10.00-\$25.00, a deductible contribution, to the American Medical Education Foundation and to do it before December 31.

C. HAROLD JAMESON, M. D.,
Maine Chairman for A.M.E.F.

Your Directory Information Card

The new, 19th Edition of the AMERICAN MEDICAL DIRECTORY is now in galley form, and it is expected that the book will be ready for delivery about the middle of 1955. The previous edition was issued in 1950. Since that time, it has not been possible to publish a new edition because changes in the membership structure of the American Medical Association made it difficult to obtain an accurate list of members.

Within the next few weeks, a directory information card will have been mailed to every physician in the United States, its dependencies, and Canada, requesting information to be used in compiling the new Directory. Physicians receiving an information card should fill it out and return it promptly regardless of whether any change has occurred in any of the points on which information is requested. It is urged that physicians also fill out the right half of the card, which section requests information to be used exclu-

sively for statistical purposes. Even if a physician has sent in similar information recently, he should mail the card promptly to the Directory Department of the American Medical Association to insure an accurate listing of his name and address. There is no charge for publishing the data, nor are physicians obligated in any way.

The Directory is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States. In it, as in no other published directory, one may find dependable data concerning physicians, hospitals, medical organizations, and activities. It provides full information on medical schools, specialization in the fields of medical practice, memberships in special medical societies, tabulation of medical journals and libraries, and statistics on the distribution of physicians and hospitals in the United States.

NECROLOGY

Harry Lester Curtis, M. D.

1896 - 1954



On September 17, 1954, Harry Lester Curtis, a member of the Cumberland County Medical Society, died at his home in Portland, Maine. Dr. Curtis had borne quietly and with admirable fortitude a progressive illness for a long time.

He was born into a medical family in Topsham, Maine, on October 18, 1896; the son of Dr. Harris Obadiah Curtis and Laura Addie Douglass. He attended the public schools

of Topsham, entered Bowdoin College in due course of time and received an A.B. degree in 1920. He had a tour of duty in the armed services after which he matriculated at Tufts Medical School and graduated with a degree in medicine in 1924.

Following graduation, Dr. Curtis served as a House Officer in the Maine General Hospital. During his period in the hospital he displayed an interest in Urology and shortly after the completion of his service was appointed an "adjunct surgeon" in the Department of Urology. In this specialty Dr. Curtis spent a busy professional life. He was for many years Chief of the Urological Service at the Maine Eye and Ear Infirmary and a member of the Queen's and Mercy Hospital staffs in the Urological Department. He was a diligent practitioner and applied himself closely to his specialty for about thirty years establishing a busy and successful practice.

He was a member of the Portland Medical Club, Cumberland County Medical Society, the Maine Medical Association and the American Medical Association. And he was a regular and attentive attendant of the meetings of the local societies.

Dr. Curtis married in Topsham, Maine, August 14, 1928, Alice Emelie Hansen of Westbrook, who was a graduate nurse of the Maine General Hospital. To this couple was born three children, making a devoted and affectionate family group which lived for many years at 841 Congress Street, Portland.

Surviving the doctor are Mrs. Curtis, a son, Harris, and two daughters, Dorothy (Mrs. Salem of Watertown, New York), and Ruth and one grandchild.

Walter J. Gilbert, M. D.

1875 - 1954

Dr. Walter J. Gilbert died suddenly at his summer home in East Machias on September 6, 1954. He was the son of the late L. Walter and Amelia Page Gilbert of Dexter, Maine, and was born in Boston, Massachusetts, March 9, 1875.

He attended the University of Maine and Boston University and received a degree in medicine from Ohio State University in 1898, followed by post-graduate work at the New York Eye and Ear Infirmary.

Dr. Gilbert was actively engaged in the practice of ophthalmology until his demise. His work in Washington County began in 1899 and throughout Washington County in Maine, and Charlotte and York Counties in New Brunswick, he was held in the highest esteem by his patients for the meticulous professional care that he rendered them.

In 1948 he received a Fifty-Year medal from the Maine Medical Association. He was also a member of the Ameri-

can Medical Association, the New Brunswick Medical Society, the Washington County Medical Society and the St. Croix Medical Society. He was affiliated with the Masonic bodies and was a member of Anah Temple, Order of the Mystic Shrine.

Dr. Gilbert is survived by his wife, Mrs. Hattie Snell Gilbert, and three cousins, Miss Geneva Watson of Jamaica Plain, Massachusetts; Almon R. Page of Dexter; and Sherwood Smith of Auburn.

Funeral services were held at the East Machias residence with the Rev. Herbert L. Wass of East Machias officiating, assisted by the Rev. D. B. Earle of St. Stephen, N. B. Interment was in Mount Hope Cemetery, Dexter, Maine.

It was my privilege to be associated with Dr. Gilbert in his practice for thirty years. His medical colleagues have lost a wise counselor and friend.

P. J. MUNDIE, M. D.

COUNTY SOCIETIES

Androscoggin

President, Norman O. Gauvreau, M. D., Lewiston
Secretary, Pauline G. Starks, M. D., Lewiston

Aroostook

President, John R. Osborne, M. D., Houlton
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Eugene E. O'Donnell, M. D., Portland
Secretary, Stanley E. Herrick, M. D., Portland

Franklin

President, John W. Friend, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, Mason Trowbridge, Jr., M. D., Ellsworth
Secretary, Arthur M. Joost, Jr., M. D., Bucksport

Kennebec

President, Charles E. Towne, M. D., Waterville
Secretary, Arch H. Morrell, M. D., Augusta

Knox

President, William A. McLellan, M. D., Camden
Secretary, Verla E. Worthing, M. D., Thomaston

Lincoln-Sagadahoc

President, Marion W. Westermeyer, M. D., Bath
Secretary, John P. Goodrich, M. D., Boothbay Harbor

Oxford

President, Harry L. Harper, M. D., South Paris
Secretary, Peter B. Aucoin, M. D., Rumford

Penobscot

President, Magnus F. Ridlon, M. D., Bangor
Secretary, Herbert C. Scribner, M. D., Bangor

Piscataquis

President, Norman H. Nickerson, M. D., Greenville
Secretary, Charles N. Stanhope, M. D., Dover-Foxcroft

Somerset

President, William B. Grow, M. D., Fairfield
Secretary, Harland G. Turner, M. D., Norridgewock

Waldo

President, Seth H. Read, M. D., Belfast
Secretary, Raymond L. Torrey, M. D., Searsport

Washington

President, Edwin B. Johnston, M. D., St. Stephen, N. B.
Secretary, Karl V. Larson, M. D., East Machias

York

President, Leandre R. Charest, M. D., Biddeford
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Aroostook

Dr. William F. Mahaney of Saco, President of the Maine Medical Association, was a guest speaker at a meeting of the Aroostook County Medical Society held in Fort Fairfield, October 14, 1954.

The following physicians were elected to membership: George J. Harrison, M. D., Harry M. Helfrich, M. D., Nancy R. Helfrich, M. D., Frederick J. Gregory, M. D., and Raymond G. Giberson, M. D.

Clyde I. Swett, M. D.,
Secretary.

Oxford

The annual meeting of the Oxford County Medical Society was held at Bethel Inn, Bethel, Maine, on Wednesday, October 13, 1954. The following officers were elected:

President, Harry L. Harper, M. D., South Paris.

Vice President, John F. Hughes, M. D., Dixfield.

Secretary-Treasurer, Peter B. Aucoin, M. D., Rumford.

Councilors: H. Louella Noyes, M. D., Rumford (1 year), John A. Greene, M. D., Rumford (2 years), Willard H. Boynton, M. D., Bethel (3 years).

Delegates to the Maine Medical Association: James A. MacDougall, M. D., Rumford (1 year), Albert P. Royal, M. D., Rumford (2 years). Alternates: John P. Hughes, M. D., Dixfield (1 year), David S. Broughton, M. D., Rumford (2 years).

Speakers were: Dr. William F. Mahaney, President of the Maine Medical Association, and Dr. Carl W. Irwin of Bangor.

Dexter E. Elsemore, M. D.,
Secretary.

Penobscot

Dr. Arthur Thibodeau of the New England Hospital Center, Boston, was guest speaker at a meeting of the Penobscot County Medical Association on Tuesday, October 19, 1954, in Bangor, Maine. Dr. Thibodeau's subject was Low Back Pain.

Herbert C. Scribner, M. D.,
Secretary.

Piscataquis

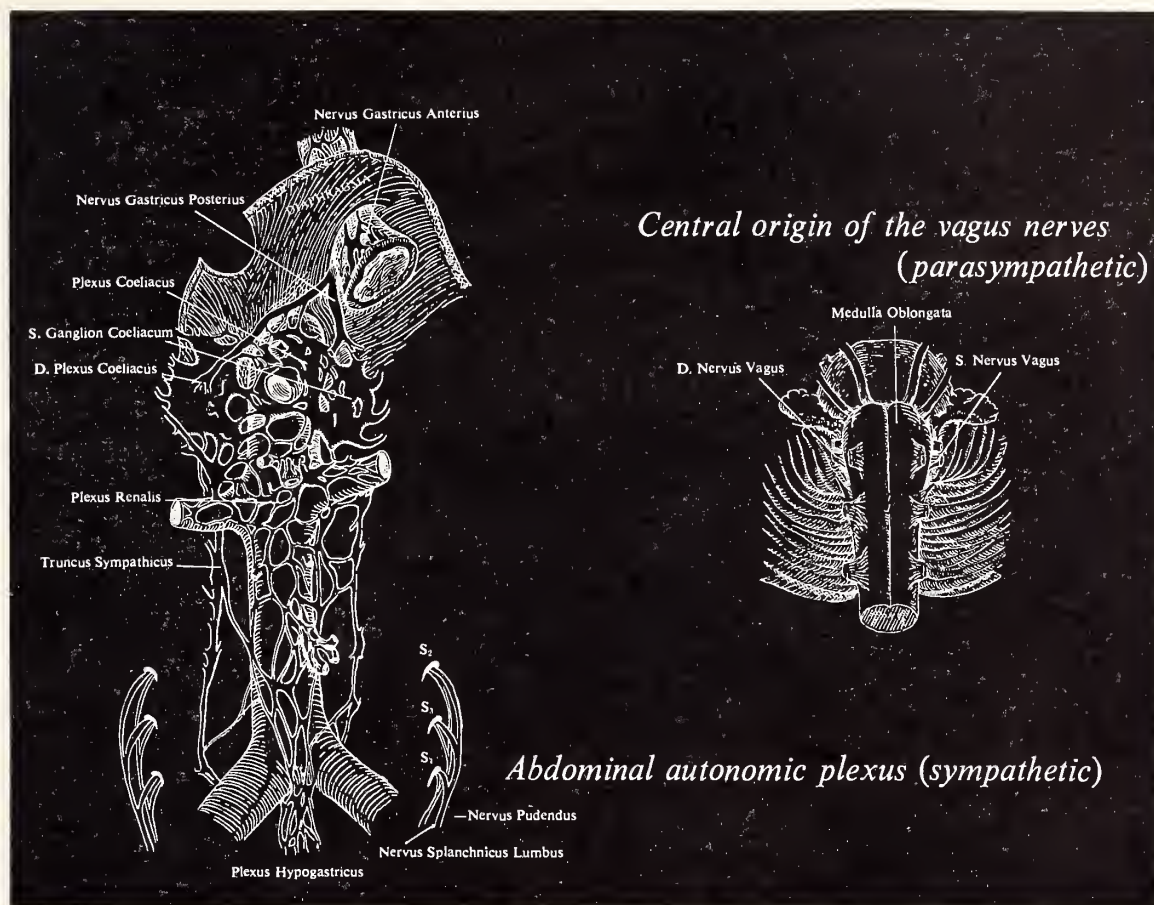
Dr. Norman H. Nickerson of Greenville, was elected President of the Piscataquis County Medical Society, at the annual meeting of the society held October 14, 1954, in Dover-Foxcroft, Maine. Dr. Charles N. Stanhope of Dover-Foxcroft, was elected Secretary-Treasurer.

Washington

A regular meeting of the Washington County Medical Society was held on Thursday, October 21, 1954, in the Congregational Vestry at East Machias. There were twenty-one members and guests present. After an excellent supper served by members of the Ladies' Union Society, Dr. James C. Bates of Eastport, President of the Society, presided at the business meeting. Dr. John T. Metcalf of Calais, reported on his activities as a delegate at the Maine Medical Association meeting. Dr. Robert G. MacBride of Lubec, announced that National Diabetic Week would begin November 16th and he asked for coöperation in making a special effort during that week to detect new diabetics. It was voted to send Resolutions of Respect to Mrs. Walter J. Gilbert of Calais, wife of the late Dr. Gilbert, who was an esteemed member of the Society.

Dr. Charles D. McEvoy of Bangor, guest speaker, spoke on Tumors of the Salivary Glands. He covered the salivary gland tumors which have been diagnosed in the Stodder Laboratory of the Eastern Maine General Hospital since 1947. There were 54 tumors of all types. The parotid gland

Continued on page 310



Control of Gastric Motility and Spasticity in Peptic Ulcer with Banthine®

"The need¹ for suppressing gastric motility and spastic states is . . . fundamental in peptic ulcer therapy. Since the cholinergic nerves are motor and secretory to the stomach and motor to the intestines, agents capable of blocking cholinergic nerve stimulation are frequently used to lessen motor activity and hypermotility."

Banthine² "has dual effectiveness; it inhibits acetylcholine liberated at the post-ganglionic parasympathetic nerve endings and it blocks acetylcholine transmission through autonomic ganglia."

It has been shown¹ to diminish gastric motility and secretion significantly as well as intestinal and colonic motility.

The usual schedule of administration in peptic ulcer is 50 to 100 mg. every six

hours, day and night, with subsequent adjustment to the patient's needs and tolerance. After the ulcer is healed, maintenance therapy, approximately half of the therapeutic dosage, should be continued for reasonable assurance of nonrecurrence.

Banthine® (brand of methantheline bromide) is supplied in: Banthine ampuls, 50 mg.—Banthine tablets, 50 mg.

It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Searle Research in the Service of Medicine.

1. Zupko, A. G.: Pharmacology and the General Practitioner, GP 7:55 (March) 1953.

2. McHardy, G. G., and Others: Clinical Evaluation of Methantheline (Banthine) Bromide in Gastroenterology, J.A.M.A. 147:1620 (Dec. 22) 1951.

County Society Notes—Continued from page 308

was most commonly involved with the majority a benign tumor of the so-called mixed type. The submaxillary gland was considerably different in that about 50% were malignant. He stated that these records showed about a 13% recurrence after operation with about the same percentage showing some damage to the facial nerve after operation. He advised that a marked reduction in recurrence rate could be obtained by a wider and more radical approach to the parotid and submaxillary gland with, in many cases, complete removal of the gland.

The following slate of officers was elected for the coming year:

President, Edwin B. Johnston, M. D., St. Stephen, N. B.

Vice President, Hazen C. Mitchell, M. D., Calais.

Secretary-Treasurer, Karl V. Larson, M. D., East Machias.

Censor, John J. Hanson, M. D., Machias (3 years).

Delegate to the Maine Medical Association: John T. Metcalf, M. D., Calais. Alternate: Oscar F. Larson, M. D., Machias.

KARL V. LARSON, M. D.,
Secretary.

York

The Fall meeting of the York County Medical Society was held at the Stardust Inn, Kittery, Maine, on Wednesday, October 13, 1954. There were twenty-four members and five guests present. An excellent dinner of steak or lobster was served following a social hour.

A panel discussion of the Blue Shield Plan was conducted by Dr. Stephen A. Cobb of Sanford, and questions answered by Mr. Richard F. Nellson of Portland, Manager of the Blue Shield Claims Department.

At the business meeting, Dr. Melvin Bacon of Sanford, was appointed Chairman of a Diabetic Committee and instructed to select his own committee members. It was voted to have any local physician notify the secretary of the death of any doctor in his locality. Dr. Leon R. Jellerson of North Berwick was elected to membership.

The November meeting will be held in York, with Dr. Willard H. Bunker and Dr. Alexander W. Magosci as a committee on arrangements.

CHARLES W. KINGHORN, M. D.,
Secretary.

New Members**Aroostook**

George J. Harrison, M. D., Houlton, Maine.

Harry M. Helfrich, M. D., Presque Isle, Maine.

Nancy R. Helfrich, M. D., Presque Isle, Maine.

Raymond G. Giberson, M. D., Presque Isle, Maine.

Frederick J. Gregory, M. D., Caribou, Maine.

Lincoln-Sagadahoc

John F. Andrews, M. D., Boothbay Harbor, Maine.

Everett D. Schubert, M. D., Wiscasset, Maine.

York

Leon R. Jellerson, M. D., North Berwick, Maine.

Deceased**Androscoggin**

Alton L. Grant, Jr., M. D., Auburn—October 9, 1954.

New Veterans Care Bulletin

To keep the medical profession informed on veterans care problems, AMA's Council on Medical Service through its Committee on Federal Medical Services is preparing a regular newsletter. The first issue contained an excerpt from a speech by the late President Roosevelt pointing out that veterans should not be a special class . . . statistics showing that many

VA hospitals lack qualified personnel . . . a suggestion from one of the veterans groups that doctors be drafted for VA hospitals. . . . Because so much interest was aroused by the initial publication, the Committee plans to expand its mailing list to include state and county medical society leaders as well as committee members.

**IF ADVERTISED IN THE
JOURNAL
IT IS GOOD**

Coming Meetings

- American Medical Association:** George F. Lull, M. D., 535 North Dearborn Street, Chicago 10, Illinois, Secretary.
1954 Clinical Meeting, Miami, Florida, November 29-December 2.
1955 Annual Meeting, Atlantic City, New Jersey, June 6-10.
- Maine Medical Association:** Esther M. Kennard, 142 High Street, Portland 3, Maine, Secretary.
1955 Interim Meeting, House of Delegates, Bangor, Maine, February 16.
1955 Annual Session, The Samoset, Rockland, Maine, June 19, 20, 21. J. Robert Downing, M. D., 35 Summer Street, Kennebunk, Maine, Program Chairman.
- American Congress on Obstetrics and Gynecology,** Palmer House, Chicago, Illinois, December 13-17, 1954. R. Gordon Douglas, M. D., 116 South Michigan Avenue, Chicago 3, Illinois, General Chairman.
- American Academy of Dermatology and Syphilology,** 13th annual meeting, Palmer House, Chicago, Illinois, December 4-9, 1954. J. E. Rauschkolb, M. D., P. O. Box 6565, Cleveland 1, Ohio, Secretary.
- Eastern States Health Education Conference of the New York Academy of Medicine,** 2 East 103rd Street, New York City, Thursday and Friday, April 21-22, 1955. Iago Galdston, M. D., Secretary.
- New Orleans Graduate Medical Assembly,** Municipal Auditorium, New Orleans, March 7-10, 1955. A post-clinical tour of Europe will follow this meeting. Maurice E. St. Martin, M. D., 1430 Tulane Avenue, New Orleans 12, Louisiana, Secretary.
- University of Florida Ninth Annual Midwinter Seminar in Ophthalmology and Otolaryngology,** SansSouci Hotel, Miami Beach, Florida, week of January 17, 1955. Lectures on Ophthalmology, January 17, 18 and 19. Lectures on Otolaryngology, January 20, 21 and 22.

NEWS AND NOTES

Maine Radiological Society Officers

The following officers were elected at a recent meeting of the Maine Radiological Society at Lewiston, Maine.
President, Clark F. Miller, M. D., Central Maine General Hospital, Lewiston.
Vice President, G. E. Clifford Logan, M. D., Mercy Hospital, Portland.
Secretary-Treasurer, Walter A. Russell, M. D., Augusta General Hospital, Augusta.
This society, which is now in its fifth year, has a membership of 17 active members, 8 associate members and 3 honorary members.

Dr. Blaisdell Appointed Member American Diabetes Association Board of Governors

Elton R. Blaisdell, M. D., of Portland, has been appointed Governor for the State of Maine, to the recently established Board of Governors of the American Diabetes Association, Inc. The Board of Governors, which includes a Governor for each state, has been established to stimulate interest in diabetes and related conditions, as well as facilitate coordination of such activities.

Maine Chapter American Academy of General Practitioners Elects Officers

The following officers were elected at a meeting of the Maine Chapter of the American Academy of General Practitioners held at Togus, Maine, October 13, 1954.
President, Francis A. Fagone, M. D., Portland.
President-elect, Charles R. Geer, M. D., Portland.
Vice Presidents, Peter B. Aucoin, M. D., Rumford and Daniel F. Hanley, M. D., Brunswick.

M. M. A. Members Elected by Maine Cancer Society

Isaac M. Webber, M. D., of Portland, was re-elected president of the Maine Cancer Society at the annual meeting of the society held in Augusta, Maine, October 13, 1954.
William Holt, M. D., of Portland, Forrest B. Ames, M. D., of Bangor, and Romeo A. Beliveau, M. D., of Lewiston, will continue to serve on the executive committee. Re-elected to

the board of directors for three years were, Joseph E. Porter, M. D., of Portland, and Magnus F. Ridlon, M. D., of Bangor. Included among new members of the board, elected for three years, was Oakley A. Melendy, M. D., of Augusta.

American Board of Obstetrics and Gynecology
Part I Examinations

The next scheduled examination (Part I), written examination and review of case histories, for all candidates will be held in various cities of the United States, Canada, and military centers outside the continental United States, on Friday, February 4, 1955.
Case Abstracts numbering 20 are to be sent by the candidate to the Secretary as soon as possible after receiving notification of eligibility to the Part I written examination.
ROBERT L. FAULKNER, M. D.,
Secretary,
2105 Adelbert Road,
Cleveland 6, Ohio.

Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.
Augusta General Hospital, Augusta, Maine, 1st Monday, 9.00 A. M., Leon D. Herring, M. D., Director.
Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.
Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.
Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.
Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Ross W. Green, M. D., Director.
St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.
Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.
Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

**Department of Health and Welfare
Division of Maternal and Child Health
(Including Services for Crippled Children)
Clinic Schedule — July Through December, 1954**

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: July 12, Aug. 9, Sept. 13, Oct. 11, Nov. 8, Dec. 13.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: July 16, Aug. 20, Sept. 17, Oct. 15, Nov. 19, Dec. 17.

Rumford — Community Hospital, 1.30-3.00 p. m.: Sept. 15, Dec. 15.

Augusta — Augusta General Hospital, 1.00-3.00 p. m.: Aug. 26, Dec. 23.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m. Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: July 23, Aug. 27, Sept. 24, Oct. 22, Nov. 19, Dec. 17.

PEDIATRIC CLINICS

**Bangor* — Eastern Maine General Hospital, 1.30 p. m.: July 23, Aug. 27, Sept. 24, Oct. 22, Nov. 19, Dec. 17.

**Waterville* — Thayer Hospital, 1.30 p. m.: July 6, Aug. 3, Sept. 7, Oct. 5, Nov. 2, Dec. 7.

*Several of the Pediatric Clinics, and also Bangor CC Clinics, will be two-session clinics.

By Appointment Only

Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Mansfield Clinic, Thayer Hospital. 3rd Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Caribou, Houlton, Lincoln, Machias, Rockland and Rumford. The Portland Clinic is open daily with a staff of 1 psychiatric social worker and 1 psychologist. The psychiatrist is in attendance on Tuesdays. The other clinics are staffed by a psychiatrist and a psychologist.

Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.

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Philips X-ray 20 mil. machine with table and Bucky.
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American Medical Association's Public Relations Institute

The AMA's Public Relations Institute in Chicago, September 1 and 2, attracted almost 300 state and county medical society representatives. Attending the "cracker barrel Institute" from Maine was W. Mayo Payson, Executive Secretary of the Maine Medical Association.

The Institute, planned primarily for lay executive and PR personnel, M. D. chairman of PR committees, and Auxiliary PR committee women, was the most successful ever held. The two-day meeting featured experts in medical television production, direct mail promotion, AMA services, medical fees, the role of medical assistants, medical motion pictures, and inter-organizational cooperation.

Because of the large and enthusiastic attendance, almost every problem confronting medical societies was discussed, and the meeting provided many suggestions and approaches to a successful and thorough medical public relations program for each society.

This cooperative spirit at the Institute displayed the united front of nationwide medical public relations, and the reported "success stories" were convincing proof that the programs of medical societies were winning the increased understanding and friendship of the public.

Another meeting, keyed to the public relations needs of

individual physicians, will be the AMA's Seventh National Medical Public Relations Conference in Miami at the McAllister Hotel, Sunday, November 28—the day preceding the opening of the Clinical Session. All physicians are invited to participate and to learn how their colleagues have improved medical public relations in their home communities.

The National Foundation for Infantile Paralysis Clinical Fellowships

The National Foundation for Infantile Paralysis announces the availability of a limited number of clinical fellowships in the fields of physical medicine and rehabilitation. These are offered to physicians who wish to become eligible for certification by the American Board of Physical Medicine and Rehabilitation.

These fellowships are awarded as a part of the National Foundation's program of professional education for which more than \$19,000,000 in March of Dimes funds have been appropriated since 1938.

For further information and application blanks address: The National Foundation for Infantile Paralysis, Division of Professional Education, 120 Broadway, New York 5, N. Y.

BOOK REVIEW

THE MANUAL OF ANTIBIOTICS, Henry Welch, Ph.D., 87 pp., New York, N. Y., Medical Encyclopedia, Inc., \$2.50.

"Complete" is the word to describe this compilation of all antibiotics on the market today. Whether one is an allergist, a gynecologist, a dentist or a veterinarian the product and the means of exhibition is available to you. The allergist has non-sensitizing penicillin as L-ephenamine penicillin G or cerocillin, the gynecologist has his penicillin bougies for insertion into the breast for mastitis, the veterinarian has Penicillin-Dihydrostreptomycin pellets for chronic sinusitis in turkeys, and lastly the dentist has toothpaste with any antibiotic or combination thereof mixed in.

In whatever form you wish it, it is available, believe me, with or without mineral oil, aspirin, antihistamines or vasoconstrictors.

The topical group of antibiotics are principally used as such, in ointments, creams, pastes, powders, solutions and troches. They are Bacitracin, Neomycin, Polymyxin and Tyrothricin.

Fumagillin stands by itself as a treatment for Intestinal Amebiasis.

The long acting form of penicillin (dibenzylethylenediamine dipencillin) is available under the trade names of

Duopen, Permapen, Bicillin and Neolin. One dose is supposed to give low levels for days or weeks. This is especially useful in treatment and prophylaxis of Streptococcus infections in Rheumatic Fever.

The pulmonary infections are sometimes amenable to aerosol therapy with penicillin with Penlator or Penicillin Dispolator, with dihydrostreptomycin as Dihydro Dispolator and with Terramycin Aerosol, all of which are specially prepared inhalating products. Neopenil by injection is supposed to concentrate itself in the lung when given parenterally.

The penicillin tablets come in dosage from 25,000 to 1 million unit sizes as buffered, soluble and effervescent forms.

It is recently recommended that a equal combination of equal parts of streptomycin and dihydro-streptomycin causes less 8th nerve toxicity. As a result this combination is available without penicillin as Combistrep, Distreptocin, Distycin, Duostrep; and with penicillin as Durycin 300/.3, 400/.5 or Crysdimycin 600/1.0.

The newest of the broad spectrum antibiotics Tetracycline (Achromycin, Polycycline or Tetracylin) is now available in the capsule, tablet, powder and intravenous form.

The only things missing in this compendium are the price tags.

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TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

Isolating the Recalcitrants

By Roberts Davies, M. D., NTA Bulletin, June, 1954.

During the past five years Firland Sanatorium in Seattle, Washington, has had an unusual and perhaps unique experience in treating tuberculosis in a large number of persons comprising one of the most unfortunate segments of society—vagrants and chronic alcoholics. This discussion is an attempt to share the experience with others who may face similar problems. It is by no means a blueprint for action, since the staff of Firland Sanatorium does not believe that the best answer to any of the problems encountered is known at this time.

Adequate Beds Available

The situation in the state of Washington has been unusual in that since 1947 in our city, county, and state we have had more beds for the treatment of tuberculosis than have been needed. In the second place, and perhaps largely because there has been an adequate number of beds, the state and local health officers have been zealous in their attempts to isolate every individual known to have infectious tuberculosis and to find the unknowns as rapidly as possible. A city-wide mass X-ray survey in 1948 included the Skid Row area and for several years the Seattle-King County Health Department has X-rayed each new admission to the King County Jail and to the Alcoholic Rehabilitation Center. This survey has recently been extended to the Seattle City Jail.

Locked Ward Necessary

The policy of enforced isolation has necessitated a locked ward which is a part of the hospital and to which patients are admitted by order of local health officers from anywhere in the state. An occasional patient is admitted on parole from one of the state penal institutions or mental hospitals for treatment of a tuberculosis lesion that cannot be treated in the referring institution. But the great majority of admissions to the locked ward are unemployed or very irregularly employed chronic alcoholics from the metropolitan area.

The first detention facility was a large open ward, but numerous difficulties, ranging from fights between patients to arson and mass escape, have taught that such an arrangement was impractical. There is now a 52-bed ward consisting entirely of single rooms, except for two double rooms in the small and separate area for women patients. There are double sets of locked doors to the outside and windows are covered by heavy screens. All of the rooms can be locked individually. Almost all the rooms have furniture like that in the other rooms in the hospital. A few have only concrete blocks on which a mattress can be placed and have doors which are much heavier than the others. These rooms are reserved for patients who present an unusual risk of suicide, assault, or destruction of property. The whole ward is painted in light colors and is physically as attractive as any other ward in the hospital.

Recreation Facilities Furnished

Except for the maximum security rooms, patients' doors are locked only at night. Visiting between patients is permitted but congregation of large groups is discouraged. Reading material, radios, and television sets are permitted as on any other ward. Occupational therapy which does not require dangerous instruments, such as knives, is encouraged. The facilities of the Departments of Social Service, Rehabilitation, and Education are furnished as on any other ward, and the services of chaplains and psychiatrists are available. The decreased emphasis on bed rest has created a need for more recreational facilities and a recreation room is now being provided. Visitors from outside the hospital are permitted, but only at one end of the ward, where the visitor is separated from the patient by a heavy fine mesh screen. Patients from the other wards are not permitted to visit patients

in the locked ward except in an emergency.

The patients in the locked ward are not permitted to have money or valuables. These are kept for them and they may make purchases by written order on their accounts in the hospital business office. Their mail is opened and read and any packages are opened and inspected in order to prevent narcotics or other undesirable material reaching the patients.

Punishment Not the Purpose

Although there is forced confinement, punishment is no part of the purpose of this program and that fact is emphasized to both patients and employees. The locked ward has only two purposes. These are closely related. The first is to isolate from the public those few patients with infectious tuberculosis who will not stay in a tuberculosis hospital unless they are locked in and who cannot or will not isolate themselves outside the hospital. The second purpose is to protect the other patients of the hospital from disturbance, chiefly from drunkenness, on the part of those few patients who cannot observe the usual standards of conduct.

The average patient who is admitted to the locked ward stays about two weeks and is then transferred to an open ward of the hospital. If he leaves the hospital without permission or becomes disturbing to others, usually because of drinking, he is readmitted to the locked ward for perhaps a month.

On the third admission he will probably stay three months. On the fourth admission he may stay six months or until he is eligible for discharge from the hospital.

The great majority of patients who are admitted to the locked ward are not very troublesome. As a result of the aggressive program of tuberculosis control, from 200 to 300 chronic alcoholic patients are constantly in the hospital but the census on the locked ward is usually about 30.

Short-Term Results Good

The short-term results of tuberculosis treatment in this group of patients is extraordinarily good. Alcoholism and inadequate diet have greatly lowered their resistance to tuberculosis and when these conditions are corrected they respond, sometimes almost miraculously, to proper treatment.

The long-term results of treatment of tuberculosis and of efforts directed toward general rehabilitation are discouraging. The results in treating alcoholism in persons who wish to continue to drink heavily are no better than those reported by others. While a few men have actually been rehabilitated, the majority return to their old pattern of life on discharge and the tuberculosis relapse rate is high. Another possible factor in relapse is a high proportion of refusals of surgery by these men who have a life-long pattern of attempting to avoid the unpleasant aspects of reality.

Altogether this program seems worthwhile. It protects the community from a great many sources of infection. It provides care and treatment for a great many men who need it badly.

It may be objected by some that one provides a doubtful service if it must be given under lock and key. Certainly, the patients often complain bitterly about being deprived of their liberty and about everything else connected with their treatment. But rather frequently they ask to be kept on the locked ward when they are eligible for transfer to some other part of the hospital. If they run away from the hospital, they often return voluntarily after a short fling. If they do not return, they usually are arrested for drunkenness or by some means arrange matters so that they are certain to be brought back. They very rarely leave the state or make any real effort to escape return to the hospital. Their actions speak louder than their words.

(The printing of Tuberculosis Abstracts is made possible by the coöperation of your local tuberculosis and health association.)

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THE CAPRICIOUS BEHAVIOR OF SOME LYMPHOMATA*

RICHARD C. WADSWORTH, M. D., Bangor, Maine

During the eight-year period from July 1, 1946, to June 30, 1954, one hundred thirty-one cases of lymphoma have been examined at the pathology laboratory of the Eastern Maine General Hospital. The cases have been subdivided according to a classification modified from that of Jackson and Parker.¹

1. Hodgkin's Disease		
A. Paragranuloma	4 cases (3.2%)	
B. Granuloma	22	16.8%
C. Sarcoma	2	1.6%
2. Reticulum Cell Sarcoma	14	10.7%
3. Lymphocytic Lymphosarcoma	25	19.0%
4. Lymphoblastic Lymphosarcoma	9	6.8%
5. Giant Follicle Lymphosarcoma	7	5.3%
6. Lymphocytic Leukemia	48	36.6%
Total	131 cases	

Giant follicle lymphosarcoma is generally considered to be one of the less malignant types of lymphoma with a prognosis similar to that of Hodgkin's paragranuloma. If the process persists as giant follicle lymphoma the outlook is relatively good as the tumor is quite sensitive to radiation, but this disease behaves in a capricious manner. It frequently progresses into one of the more malignant varieties of lymphoma and then assumes the prognosis of the more malignant form. Of our seven cases of giant follicle lymphoma, four are dead with diffuse lymphocytic or lymphoblastic lymphosarcoma, one is dead from an unrelated disease, one is known to be still living and the present status of one is unknown. One of our fatal cases illustrates well the unpredictable

behavior of this group, and will serve as a provocative for the discussion which follows.

REVIEW OF CASE

This 33-year-old French-Canadian potato farmer was admitted to the Eastern Maine General Hospital on August 6, 1946, because of splenomegaly observed by his physician, who was consulted because the patient had felt tired, was slightly jaundiced and had gradually been losing weight. He had had some dyspnea on exertion, but had had no chest pain. On admission his hemoglobin was 5.5 gms., erythrocytes 1.98 millions, and his leukocyte count 6,330 per cu. mm., with a shift to the left in the granulocytic series. Nucleated red cells were seen in smears of the peripheral blood. A fragility test showed slightly increased hemolysis with hypotonic saline. Kahn and Hinton tests were positive. A sternal marrow puncture performed on the day after admission showed marked erythroid hyperplasia with 69% of the nucleated cells in the erythrocytic series. Only 0.2% of the nucleated cells were lymphocytes. Paraffin sections of the marrow showed exaggerated erythropoiesis consistent with hemolytic anemia of undetermined etiology.

When blood was ordered for a transfusion the patient was classified as Group A, Rh₀ negative, but the technician was unable to find a donor whose cells were not agglutinated by the patient's serum. It was then observed that the patient's cells were agglutinated by his own serum. At that time we did not have the anti-globulin serum to perform a Coombs

* From the Laboratory Service, Eastern Maine General Hospital. Presented at the Bangor Medical Club, September 28, 1954.

test. A cold agglutinin titer of 1:1280 was reported.

A biopsy of an axillary lymph node was done and the histology was thought to be not diagnostic. There was some obliteration of the normal follicular pattern without anaplasia. The patient was transfused with 1500 ml. of whole blood, following which he felt chilly, but he had no shaking chills and his urinary output was good.

On August 19, 1946, 13 days after admission, a 2500 gm. spleen was removed through a left rectus incision. Grossly and microscopically it was indicative of a giant follicle lymphosarcoma with congestion and erythrophagocytosis. Following splenectomy his leukocyte count rose to 78,300 per cu. mm. with 91% of the cells in the granulocytic series. He was given five X-ray treatments totalling 750 roentgens and after seventy-one days of hospitalization was discharged with a hemoglobin of 10 gms., an erythrocyte count of 3.28 millions and a leukocyte count of 6,850 with 40% lymphocytes, none of which appeared immature.

Six weeks later (4 months after first admission), he returned for a visit, having gained 32 pounds and feeling strong. His hemoglobin, erythrocyte count and total leukocyte count were normal, but his differential leukocyte count revealed 62% lymphocytes with occasional atypical cells. A bone marrow puncture now revealed 33% lymphocytes. Erythropoiesis and granulopoiesis appeared normoplastic. His titer of cold agglutinins had dropped to 1:20.

During the next four years, during which time treatment with transfusions and irradiation was continued, he developed extensive peripheral lymphadenopathy, hepatomegaly, ascites and a painful sternum. In June, 1950, a bone marrow puncture revealed almost complete replacement of his marrow by lymphocytes. A biopsy of a post-auricular node showed obliteration of the normal architectural pattern by relatively mature lymphocytes consistent with lymphocytic lymphosarcoma or lymphocytic leukemia. His leukocyte count eventually rose to 459,000 with 79% lymphoblasts. He died following a transfusion of Group A, Rh₀ positive blood. Autopsy revealed widely disseminated lymphoblastic lymphosarcoma and lymphoblastic leukemia. No accessory splenic tissue could be demonstrated.

There were several aspects of the behavior of the disease in this patient which were puzzling. The development of an acquired hemolytic anemia with a gratifying response to splenectomy, the development of abnormal antibodies in the patient's serum, the positive Kahn and Hinton tests, the transition from an erythroid, hyperplastic bone marrow to a lymphoblastic bone marrow accompanied by the appearance of leukemic cells in the peripheral blood, and the different histologic appearance of the initial lymph node biopsy, that of the spleen, and that of the lymph nodes seen at autopsy, acted as a stimulus to

review our other lymphomata for comparable complexities.

REVIEW OF LYMPHOMATA

We found no other case with such a multiplicity of atypical patterns but found several examples of transition from a relatively benign to a more malignant type of lymphoma. In addition to the four cases of giant follicle lymphoma which developed into diffuse lymphosarcoma either of the lymphocytic or lymphoblastic variety, there was one case of Hodgkin's paraganuloma which developed into Hodgkin's granuloma, and there were two cases of Hodgkin's granuloma which developed into Hodgkin's sarcoma. We found no examples of change from the more malignant to a less malignant type. We did not observe the frequent admixture of lymphomas in one individual that has been described by Custer and Bernhard.²

There were in our series two cases of Hodgkin's granuloma and two cases of lymphocytic lymphosarcoma with splenomegaly and rapidly developing anemia which, on retrospect, are possible examples of acquired hemolytic anemia with insufficient available data for definitive classification. Without any further details of case histories, the pathogenesis of some of these unpredictable complications of the lymphomata will be discussed.

PATHOGENESIS

One of the disturbing features of this capricious group of diseases is the frequency with which leukemia develops in a patient who previously exhibited focal or generalized lymphadenopathy as the only demonstrable manifestations of lymphoma. This is fairly common in lymphosarcoma, not rare in giant follicle lymphosarcoma, and is less frequent in reticulum cell sarcoma and in the various forms of Hodgkin's disease. The reason for its development in some cases, and its failure to develop in others is not understood. When it occurs, the prognosis is apt to be poor.

Anemia is not an uncommon complication of the lymphomata. The anemia which develops in those patients who have a neoplastic infiltration of the bone marrow is readily explained by the mechanical "crowding-out" of the blood-forming tissues. Anemia developing as a result of massive or prolonged hemorrhage, predisposed by the strategic anatomical location of neoplastic tissue, is easily understood. The slowly progressive anemia which develops in some lymphomatous patients is less readily explained, but there are a number of theoretical explanations which have been offered. Involvement of the gastrointestinal tract by the disease process may interfere with the absorption of food-stuffs and vitamins, and thus play a part in the development of both anemia and cachexia. Unidentified toxic products, presumably the result of the metabolism of neoplastic cells,

have been suggested as possible factors in the development of anemia either by depressing the bone marrow or by shortening the life span of the mature erythrocyte.

The factors usually considered to be important in the destruction of erythrocytes are stasis, mechanical fragmentation, spherocytosis, metabolic hemolysins, injury of the cells by exogenous chemicals, splenic activity and, finally, the fixation of specific globulins to the surfaces of the erythrocytes. It is the two latter factors, hypersplenism and the presence of serological antibodies, which have been most frequently incriminated in the acquired hemolytic anemias of patients with lymphoma.

There has been a growing tendency to use the term "auto-immune hemolytic disease" for those cases in which patients develop antibodies reacting with their own erythrocytes.³ These antibodies differ from the naturally occurring agglutinins of the A-B-O blood groups and from the agglutinins and hemolysins which are produced in the Rh negative recipients of Rh positive blood, or in Rh negative mothers bearing Rh positive children. The serological antibodies associated with the lymphomata are usually autohemolysins or autoagglutinins which appear to be produced by immunization of the patient to some antigenic constituent of his own erythrocytes. The origin of these antibodies is not understood. They have been observed not only in patients with lymphomata, including leukemia, but also in patients with periarteritis nodosa, lupus erythematosus, Boeck's sarcoid and tuberculosis.³ The presence of the autoantibody can usually be demonstrated on the patient's red cells by means of the direct Coombs test and can frequently be demonstrated in the patient's serum by means of the indirect Coombs test.

It is becoming increasingly apparent that the production of antibodies in general is closely linked with the two systems most frequently involved by the lymphomata. The lymphoid tissue, including both lymphocytes and plasma cells, and the reticulo-endothelial system appear to be the chief sources of antibody production. It is not surprising then, that we find disturbances of antibody production in this group of diseases. Not only do we find what appears to be an overproduction of harmful antibodies, but we frequently find a deficiency in the production of protective antibodies as was reported by Dubin⁴ in patients with Hodgkin's disease.

The association of the serum antibodies with the globulin fraction of the blood is well known. Recent studies of the protein fractions of the blood in the electrophoretic patterns obtained with the Tiselius apparatus and by filter-paper electrophoresis are quite pertinent. The demonstration by Arends and his associates^{5, 6} of hypoalbuminemia and hypergammaglobulinemia in patients with Hodgkin's disease, the demonstration of the complete absence of

gamma globulin in a patient with malignant lymphoma and especially the demonstration of abnormal protein constituents in the sera of patients with lymphocytic leukemia should stimulate further study regarding the relationship between abnormal protein constituents and antibody production in this fascinating group of diseases.

ROLE OF THE SPLEEN

The role of the spleen in autoimmune hemolytic disease is not clearly defined. The spleen is probably an important site of antibody formation and it may also mechanically trap erythrocytes which have been coated with antibody. The importance of "hypersplenism" in acquired hemolytic disease appears to be closely related to one's point of view. The hypersplenic enthusiasts are divided into two groups. One group believes that the spleen produces excessive destruction of erythrocytes, leukocytes and platelets by increased sequestration and phagocytosis. The other group favors a theory that the spleen produces a hormone which inhibits the formation of erythrocytes, leukocytes and platelets. Neither of these two theories explains the failure of splenectomy to alleviate the disorder in a significant number of cases.

The explanation of auto-immune hemolytic disease probably will come from the immuno-hematologists who have already shown considerable progress in this direction. Evans and his associates at the University of California⁷ have demonstrated that thrombocytopenia occurs frequently, and leukopenia occasionally, in patients whose erythrocytes are agglutinated by antiglobulin serum. These observations suggest that platelets may be destroyed by antibody and that there may be a spectrum-like relationship between idiopathic thrombocytopenia and acquired hemolytic anemia. The favorable effect obtained by the use of ACTH and cortisone, as reported by Dameshek,⁸ in the treatment of acquired hemolytic anemia, through antibody suppression, supports the idea that the fundamental process in acquired hemolytic anemia may be the widespread production of antibodies by lymphoid tissue in general.

The fact that a remission of the acquired hemolytic anemia frequently follows splenectomy does not necessarily indicate that the spleen is the cause of the disorder as has been suggested by Evans and Doan.⁹ When a splenectomy is done an important source of antibody production is removed, but some production of autoantibody continues and, even in the absence of accessory splenic tissue, a relapse may occur. When the formation of autoimmune bodies is more completely understood, the term "hypersplenism," at least in relation to acquired hemolytic anemia, will probably become obsolete. This does not imply that splenectomy is contraindicated when the anemia is inadequately controlled by other methods.

Many patients have responded favorably to such a procedure. It does, however, suggest that we should look further for the underlying causes of the hemolytic mechanism and not be completely satisfied with a symptomatic, surgical form of therapy.

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MALLORY - WEISS SYNDROME*

ROBERT O. KELLOGG, M. D., and NELSON P. BLACKBURN, M. D., Bangor, Maine

In 1929 Mallory and Weiss first described a lesion of the gastrointestinal tract.^{1, 2} They drew attention to lacerations in the mucosa at the junction of the esophagus and cardia as a source of gastrointestinal hemorrhage. The main clinical manifestations were vomiting and retching, and associated hematemesis, frequently preceded by excessive indulgence in alcohol. Past history and clinical study of their patients failed to reveal evidence of such usual sources of upper gastrointestinal bleeding as peptic ulcer, esophageal varices, or alcoholic gastritis. Post-mortem studies on their cases revealed fissure-like lesions of the mucosa, characteristically arranged around the circumference of the cardiac opening. These varied from 3 to 20 mm. in length and from 2 to 3 mm. in width. A recent report from the Boston City Hospital described 11 cases of Mallory-Weiss syndrome.³

During the first eight months of 1954, cardio-esophageal lacerations were described at autopsy on three patients at the Eastern Maine General Hospital. Clinical and pathological features of the cases are reported.

CASE REPORTS

Case 1. A 72-year-old man admitted to the Eastern Maine General Hospital, January 25, 1954, with a 4-day history of pain and limitation of motion of the right shoulder. He denied chest pain. The shoulder was warm, swollen and tender to move. Electrocardiogram revealed acute posterior myocardial infarction. On January 27th, patient went into peripheral vascular collapse. He vomited dark brown material several times during the next 24 hours. Therapy with coramine, caffeine, Wangensteen suction, I. V. fluids and levophed sustained the patient for 24 hours after which he expired. The patient was anuric on the day of death, and N.P.N. was reported as 116 mg.%. Post-mortem examination revealed a thrombosis of the circumflex branch of the

left coronary artery with recent myocardial infarction. There was marked pulmonary edema. The stomach was of normal size and contained approximately 200 c.c. of greenish fluid. At the junction of the cardia and esophagus there were five longitudinal tears in the mucosa running more or less parallel to each other in the long axis of the cardia. The largest of these tears measured 4.5 cm. in length and 0.5 cm. in width. The gastric mucosa was moderately congested throughout. There was no further evidence of ulceration or hemorrhage in the gastrointestinal tract.

Case 2. A 42-year-old farmer was readmitted to the Eastern Maine General Hospital on August 4, 1954. His first admission was in February, 1954, at which time he had a left nephrectomy. Pathological diagnosis was renal cell carcinoma showing invasion of renal vein. Recurrent hematuria prompted his second admission. He vomited frequently from August 3rd to August 8th. Exploration of the right kidney showed an organ largely replaced by tumor. Histological diagnosis of renal biopsy revealed renal cell carcinoma. The patient expired in uremia (N.P.N. 180) on the seventh post-operative day, but did not vomit during the last five days of his life.

Post-mortem examination revealed renal cell carcinoma of the right kidney with metastases to the left lung and left lobe of the liver. There was pulmonary edema and pulmonary emboli. There were thromboses of the prostatic plexus. At the lower end of the esophagus there were numerous small fragments of blood clot attached to the mucosa. On removing these there were two small longitudinal tears in the esophageal mucosa, the larger of which measured 1 cm. in length. The stomach contained 460 c.c. of dark greenish, turbid fluid. The gastric mucosa was atrophic. There was no gross evidence of ulceration, tumor or definite hemorrhage. The small and large intestine contained abundant tarry fecal material.

*From the Departments of Medicine and Pathology, Eastern Maine General Hospital.

TABLE I

Case No.	Age	Sex	Associated Clinical Disease Process	Duration vomiting days	Evidence of G. I. bleeding	Remarks	Associated Post-mortem findings
1	72	M	1. Myocardial Infarction 2. Bursitis right shoulder	6	Clinical and autopsy	Death 3rd hospital day	Marked pulmonary edema. Acute myocardial infarction. Mural thrombus of auricle. Thyroid adenoma
2	42	M	Renal cell carcinoma	Vomited 5 days one week before death	Autopsy	Death 7th day following renal exploration	Renal cell carcinoma, right kidney. Metastases to liver and lung. Thrombosis prostatic plexus with pulmonary emboli. Uremia
3	64	M	Dissecting aneurysm abdominal aorta	1	None except from patient's history	Death in shock 7 hours after admission	Massive retroperitoneal hemorrhage due to rupture of aneurysm of abdominal aorta

Case 3. A 64-year-old man was admitted to the Eastern Maine General Hospital, May 21, 1954, with history of asymptomatic hypertension detected 3 months previously. Twelve hours prior to admission marked the onset of low back pain without antecedent trauma. Three hours later he developed steady low abdominal pain and he made himself vomit. He stated that the vomitus contained blood. At the time of admission the blood pressure was 90/60 and the pulse was 90. The feet and legs were noted to be pale and cold, although there was no extremity pain, and all arterial pulsations in both legs were palpable. Electrocardiogram revealed left ventricular hypertrophy. Hemoglobin was 13 gm.%, hematocrit 45%, and WBC 16,450 with 87% polys. The patient was treated with intravenous saline and 1000 c.c. whole blood transfusion. After six hours in the hospital the blood pressure and pulse became unobtainable. Levophed failed to restore the blood pressure and the patient expired seven hours after admission. Post-mortem examination revealed a tear in the anterior aortic wall of a saccular aneurysm of the abdominal aorta with massive retroperitoneal hemorrhage. At the gastro-esophageal junction there was a small longitudinal tear in the mucosa measuring 0.8 cm. in length. There was no hemorrhage in the gastrointestinal tract.

PATHOLOGICAL DISCUSSION

The total number of this entity reported to date,^{1, 2, 3} is 32 with 17 of these being documented at autopsy. Only Case #1 would seem to strictly conform to the syndrome as originally presented by Mallory and Weiss.¹ Cases #2 and #3 present enough similar features to warrant their inclusion in the discussion. All of our cases presented severe disease of other

systems which accounted for death. The gastro-esophageal lesions being incidental findings at autopsy. Case #1, figures 1, 2, and 3, shows the striking gross and microscopic features. The lacerations were longitudinal, multiple, and involved primarily the cardia. They extended into the muscularis and showed necrosis of the marginal tissue including vascular spaces. In places the necrosis was of the coagulative type suggesting this might be due to digestive action of gastric juices. Case #2 presented small, superficial fissures limited to the esophagus. Although this patient was in uremia it was felt that these lesions were not of the uremic type. Evidence of G. I. bleeding was established only at autopsy. In Case #3 G. I. bleeding was never clinically established but was inferred from the patient's history following induced vomiting.

CLINICAL CONSIDERATION

Hemorrhage from the upper gastrointestinal tract is frequently from an undetermined site. In reported series of cases this varies considerably. Crohn⁴ reports 22 of 102 cases of gross hemorrhage as being of undetermined origin. It is our belief that some of these cases of gastrointestinal bleeding of obscure origin are instances of cardio-esophageal lacerations secondary to retching and vomiting. The lesion can be suspected clinically whenever there is upper gastrointestinal hemorrhage with retching or vomiting, and in the absence of a history, physical findings or laboratory findings suggestive, or diagnostic of, other causes of bleeding. The lesion probably will not be demonstrated by radiography, but may be visible to a gastroscopist.



Fig. #1. Gross photograph of lacerations, Case #1.

Partial gastrectomy is being resorted to in many cases of bleeding peptic ulcer, and is even recommended in massive gastrointestinal bleeding where gastrointestinal series fails to reveal the source of bleeding.⁵ If such a course is followed in Mallory-Weiss syndrome, the bleeding cardio-esophageal lacerations will be left behind.

The original descriptions by Mallory and Weiss, and the 11 cases cited by Decker quite properly stress the importance of bleeding from the lacerations. They also point out that the lacerations may be small and easily overlooked. Two of our three cases demonstrated no clinical bleeding and the finding of the lacerations in all the cases was a "surprise" post-mortem finding. If the retching and vomiting patient develops a laceration in the mucous membrane of the cardia, he is fortunate if he does not tear a vessel in the base of the laceration, much the same as an ulcer patient might ulcerate the wall of a blood vessel to produce massive gastrointestinal bleeding.

SUMMARY AND CONCLUSION

1. We present three cases with features conforming to the "Mallory-Weiss syndrome."
2. In view of the fact that the only previous reports of this condition are from the Boston City Hospital,^{1, 2, 3} our observations would seem to agree in establishing this as a clinical and pathological entity.

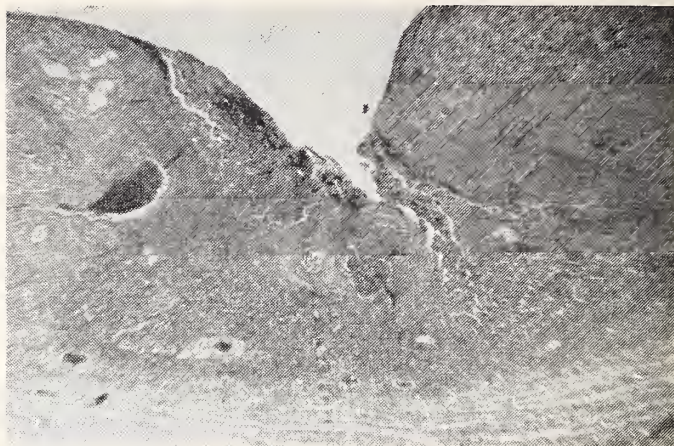


Fig. #2. Photomicrograph showing extent of a laceration, Case #1.

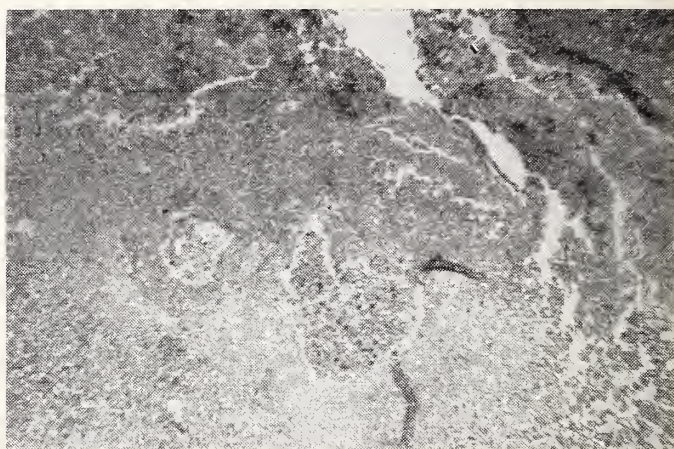


Fig. #3. Photomicrograph, Case #1, showing proximity of base of laceration to vascular spaces.

3. Cardio-esophageal lacerations should be considered in the differential diagnosis of upper G. I. bleeding where there is a history of associated retching or vomiting.

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CASE ANALYSIS OF ELECTROLYTE PROBLEMS

In Selected Hospital Patients

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INTRODUCTION

The following study was undertaken at the Eastern Maine General Hospital during November of 1953 to gain information on the electrolyte changes which occur in patients and to ascertain, if possible, the reasons for the changes observed during the time in which they were being followed carefully from an electrolyte point of view. The selection of patients was based primarily on an initial electrolyte disturbance as shown by laboratory determinations requested by the physicians in charge of the patient. Subsequent determinations were either requested by the physicians or by the writer in those cases where closer following seemed desirable to illustrate electrolyte changes.

METHODS

The bicarbonate concentration was determined by the titration method of Osgood and Haskins.¹ The chlorides were determined by the method of Schales.² The sodium and potassium concentrations were determined by the use of the Baird flame photometer using the internal lithium standard as described in the directions provided with the instrument. In each case, the patient's record and clinical course were reviewed at frequent intervals and the graphic charts included in this paper were prepared. The following discussions were based on the individual cases with an attempt to draw as many conclusions concerning the electrolytes as seems justified by the data available.

CASE NO. 1 (A. G.)

Clinical Summary:

This 64-year-old white male was admitted to the hospital on October 3, 1953, with a chief complaint of constant emesis for two weeks. The vomiting had been intermittent from two months prior to admission and had become blood-streaked during the last two weeks. He had noted constipation in the 2-3 weeks prior to admission with several "black" stools but no grossly bloody stools during that time. He gave a history of indigestion for the year prior to admission and a 35-lb. weight loss in the five weeks prior to admission. He had noted an increasing cough with sputum that had become blood-streaked prior to admission. Except for exertional dyspnea he had no symptoms of cardiac disease. His urinary stream was slow in starting. He had dribbling and stress incontinence, especially related to coughing. Recently he had noted pain on urination.

Physical Examination:

Physical examination revealed an emaciated male with a blood pressure of 140/98, temperature 96°, and pulse 84. The oral cavity was bloodstained and the lips and tongue were dry. The chest was emphysematous. The heart rate was regular and no murmurs were heard. There was tenderness in the upper abdomen and the bladder was palpated at the level of the umbilicus. The left scrotum contained a non-tender mass approximately the size of a baseball. The right testicle was soft and tender. The prostate was enlarged, soft and tender.

Catheterization shortly after admission yielded 1900 c.c. of light green urine and a urethral stricture was found. The stricture was dilated and an indwelling catheter inserted on October 4. An electrocardiogram at this time was within normal limits. His admission N.P.N. was 218 mg. per 100 c.c. of blood with a gradual, continuous rise to 265 mg. per 100 c.c. of blood on October 15. Thereafter the N. P. N. fell slowly to 85 mg. per 100 c.c. of blood in November with a rise to 137 mg. per 100 c.c. of blood at the time of discharge. One serum phosphorus and calcium determination was done on October 19, showing a phosphorus of 6.0 mg. per 100 c.c. of serum (normal 3-4 mg.) and a calcium of 7.8 mg. per 100 c.c. of serum (normal 9-11 mg.). A serum protein of 6.1 gms. per 100 c.c. of serum (normal 6-8 gms.) was found on October 5. Urethral dilatation, cystoscopy and retrograde pyelography were carried out on November 3, showing a normal right pyelogram. The catheter could not be passed beyond the brim of the pelvis on the left nor could dye be injected beyond this point. These studies were repeated on November 9 and at that time showed a tortuous, dilated left ureter and injected dye revealed a large left hydronephrosis. Further procedures were thought to be inadvisable and the patient was discharged on November 13.

Discussion:

The electrolyte data are given in Figures 1 and 2. It is to be noted that this patient's urine volume was maintained at one liter a day or more, that the urine was at no time acid in reaction, and that the specific gravity remained at or below 1.010. The fluid intake of the patient was entirely intravenous until the third week and was supplemented by intravenous fluids until after the oral intake had become stabilized at approximately two liters a day (on November 2). These observations alone would indicate permanent, severe kidney damage in this man. The serum elec-

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Case No. 1 (A.G.)

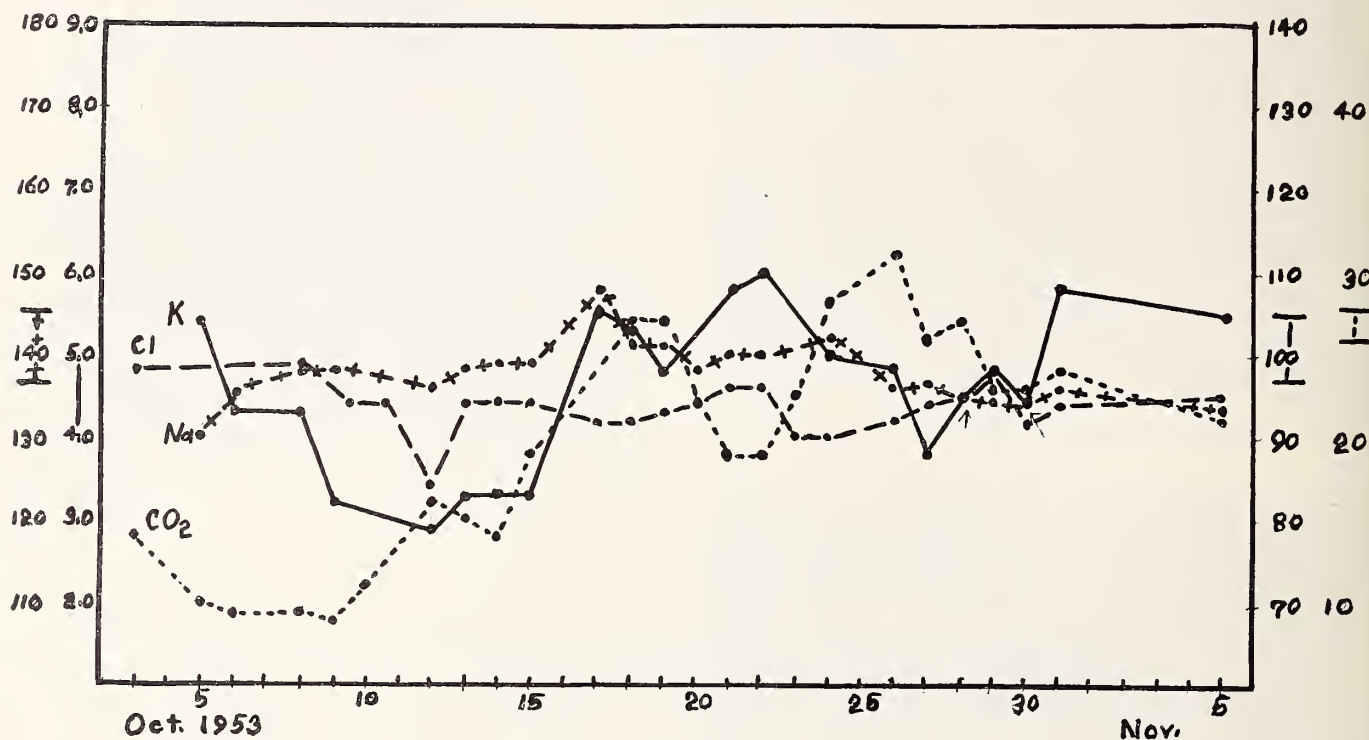


Fig. 1

trolyte pattern on admission was consistent with a uremic acidosis as outlined by Sodeman³ with a slightly elevated potassium and depressed sodium and bicarbonate. The chlorides were normal where typically they are depressed. That the phosphates were increased and the calcium depressed⁴ at this time can only be surmised, but certainly they were two weeks later on October 19 at which time there had been considerable improvement in the clinical chemistry findings in general as seen in Figures 1 and 2, by the return of the sodium, potassium, chloride and bicarbonate values to the normal range. The improvement is best seen in Figure 2 which includes "gamblegrams" prepared with the values recorded in Figure 1 on the dates given. In Figure 2 is illustrated the rise and fall in the "undetermined" anions, presumably due to changes in the phosphates, sulfates and possibly organic acids. These alterations in the undetermined group of anions corresponds directly with the rise and fall of the blood N.P.N. It is of interest to note this correspondence in spite of rather marked variations in the other electrolytes during this patient's hospital course.

Examination of the intravenous fluids indicates that six units of whole blood were given, three shortly after admission and three late in the hospital course. The laboratory data showed that preceding the two groups of transfusions the hemoglobin was below 10.0 gms. per 100 c.c. of blood and following the three transfusions in each case the hemoglobin rose above 10.0 gms. It has been stated that blood trans-

fusions with bank blood tend to elevate the serum potassium, but in this patient such a response is not evident. The serum potassium remained stable after the second and third transfusions, was lower than previous determinations after the fourth and fifth transfusions and rose slightly after the final transfusion.

The serum sodium rose to the low normal range in the first four days of intravenous therapy with 5% dextrose in isotonic saline, 5% dextrose in water, and 500 c.c. of isotonic saline. The serum sodium then remained relatively stable until October 15. Since the potassium fell to a low normal figure as the sodium was rising to a low normal level, one can postulate that potassium was re-entering the intracellular space as the serum sodium rose. In view of the dehydration and acidosis of this patient such a conclusion is possible even though it cannot be proven. With the objective correction of the sodium, potassium and water, however, the acidosis was still persistent as evidenced by a low serum bicarbonate level and a persistent rise in the N.P.N. and undetermined anion group (Figure 2). Intravenous 1/6 molar sodium lactate, 1000 c.c. daily, was added to the fluid therapy with a fairly prompt response by the plasma bicarbonate concentration. The fragility of this patient's electrolyte status at this time is demonstrated by the immediate cessation of the bicarbonate rise on October 12 when sodium lactate was withheld for 24 hours, and by the delayed response when the lactate was reinstituted (October

Case No. 1 (A. G.)

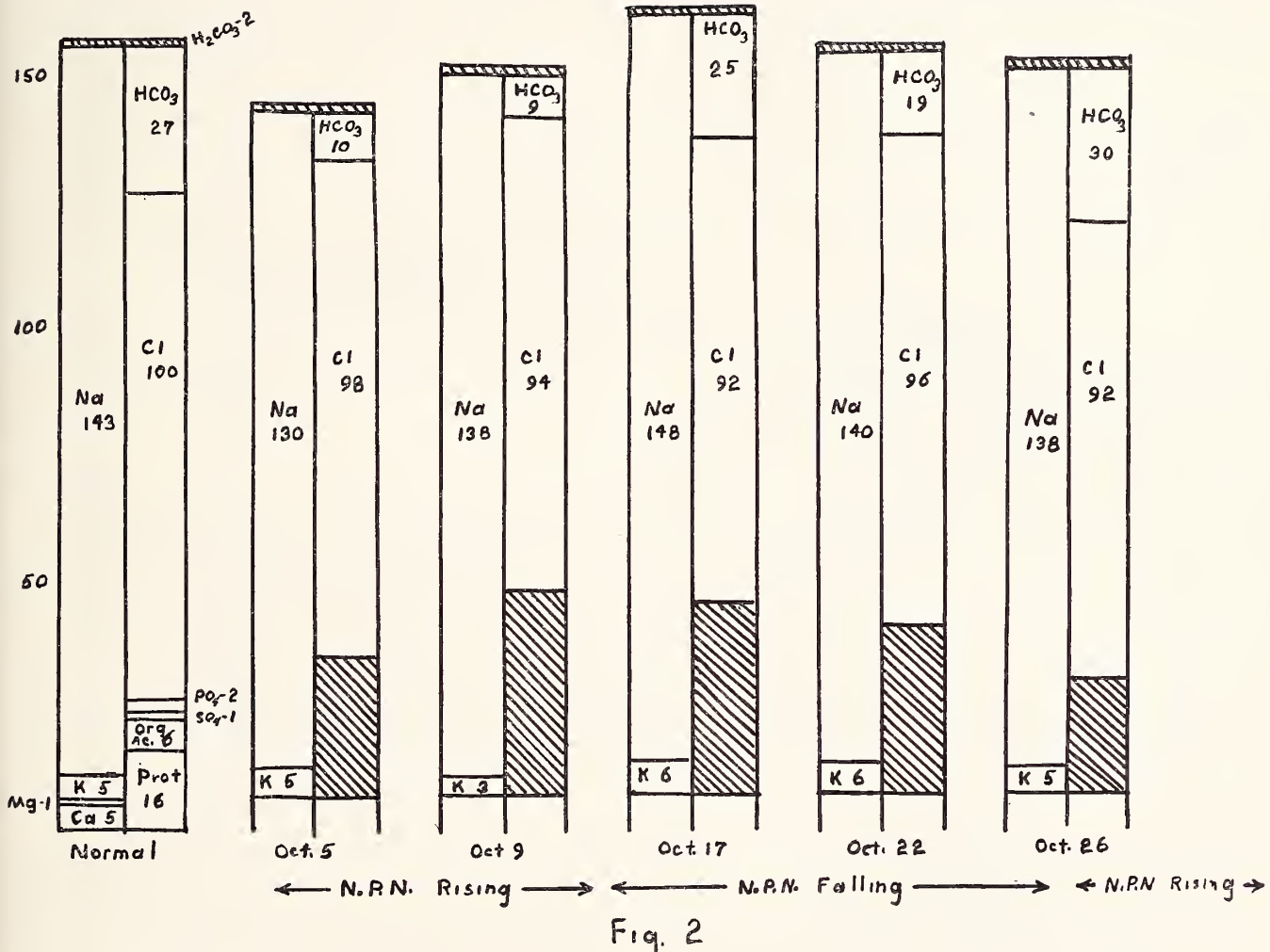


Fig. 2

13). Thereafter the plasma bicarbonate concentration rose to the normal range by October 18.

The serum potassium during this first period of lactate therapy illustrates a point made by Darrow⁵ that intravenous sodium lactate or sodium bicarbonate depresses the serum potassium, presumably by increasing the renal excretion of potassium. As the potassium reached a low level of 3.0 mEq. per liter (October 9) potassium chloride was administered in amounts of 60-80 mEq. daily in the intravenous fluids. It is to be noted that after five days of this amount of potassium, the serum level was essentially unchanged. While the sodium lactate therapy was continued, the amount of potassium chloride given was increased to 120-140 mEq. per day for two days (October 15-16) with an immediate rise in the serum level to the slightly elevated range on October 17.

The progressive fall in serum chloride coinciding with the initiation of sodium lactate therapy and taking a sharp drop on October 12 as the bicarbonate began a definite rise could be considered a reciprocal response to the bicarbonate changes. Slight similar reciprocal alterations in the serum chlorides are seen in the subsequent course of the patient, but none of

these changes are very impressive. However, the serum chloride did not fall perceptibly during the sharp rise in plasma bicarbonate between October 15 and October 18, while the potassium was rising.

This completes the discussion of the period in which the effects of renal damage were increasing. As demonstrated in Figures 1 and 2, the subsequent hospital course was marked by a gradual reduction in the N.P.N., a reduction of the abnormally high phosphate-sulfate-organic acid group of anions, various fluctuations in the other electrolytes, the beginning of oral intake of food and fluid and a satisfactory clinical return toward well-being in the patient. In this recovery period there are several interesting observations worthy of mention. The first of these is the sharp rise in serum sodium on October 17. The reason for this is not entirely clear, but the rise coincides with the beginning of the fall in the strong acid anions toward normal and is probably, in some manner, related to this fall. Certainly the amount of sodium being given by vein was no greater than before or after the rise. Another interesting point is the rather rapid fall of the plasma bicarbonate after four days (October 18-21) without intravenous so-

Case No. 2 (F.C.)

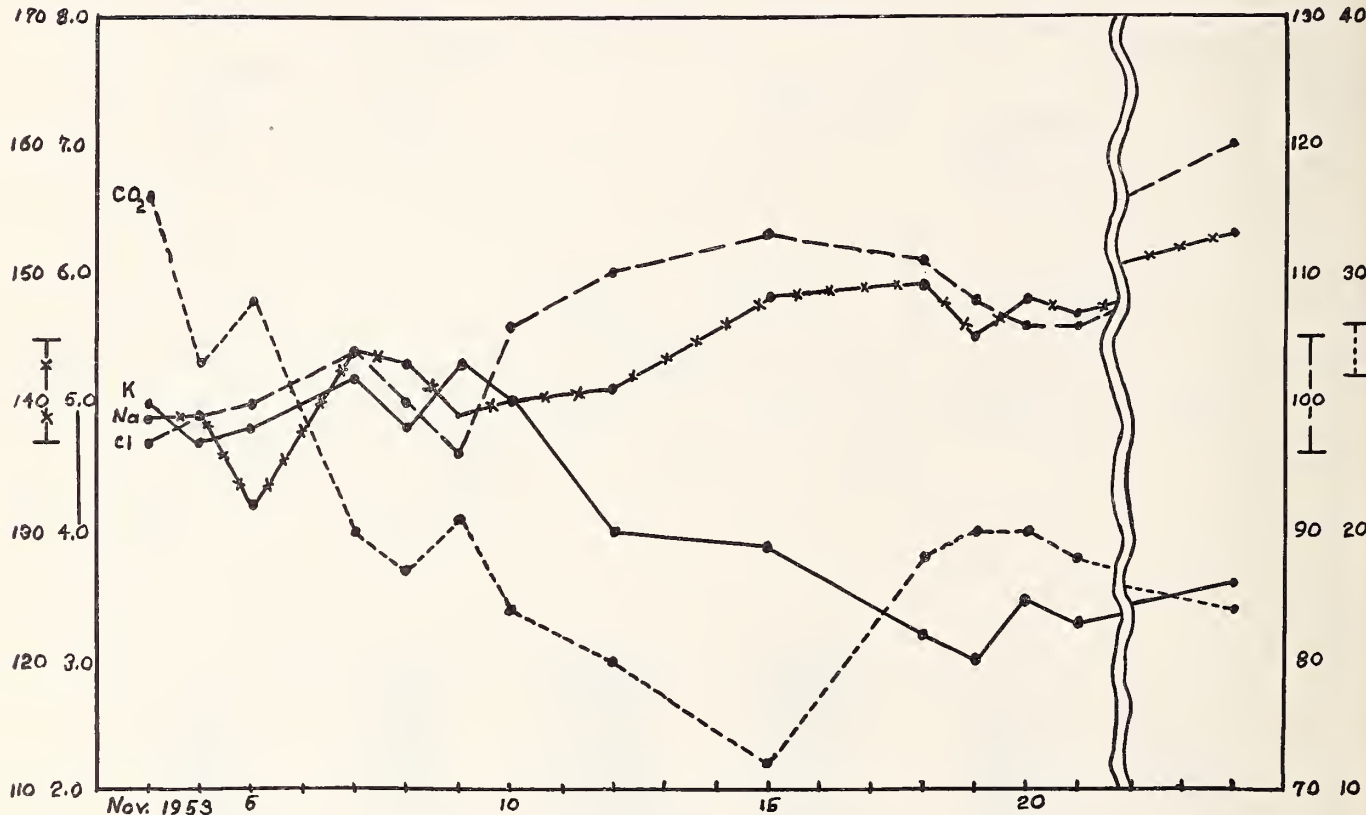


Fig. 3

dium lactate after the initial return of the plasma bicarbonate to normal. In this four-day period the serum potassium fell somewhat and then returned to 5.8 mEq. on the day before sodium lactate was reinstituted. With the onset of lactate therapy the serum potassium began to fall and continued to decline for 48 hours after lactate was stopped. At the end of this time the serum potassium was down to 3.8 mEq. and a moderate amount of potassium chloride was given. Here, again, is confirmation of the report of Darrow concerning serum potassium during lactate and bicarbonate therapy. It should be noted that the plasma bicarbonate concentration fell to 19 mEq. in four days after the first course of sodium lactate was completed. After the second course of lactate the plasma bicarbonate fell to 20 mEq. in ten days. This represents a somewhat better response of the patient's physiologic mechanisms than seen earlier in his hospitalization, but the fall makes one wonder whether this patient is capable of maintaining this electrolyte at a normal value. Since the serum sodium fell slowly but consistently over this period and reached a slightly depressed level while the serum chloride remained essentially unaltered, it is obvious (in view of the return of the strongly acid anions to essentially normal levels) that the inability to maintain a normal plasma bicarbonate is directly related to loss of sodium from the kidneys with a gradual shrinking of the total electrolytes at the ex-

pense, on the anion side, of the plasma bicarbonate. Finally, during the last few days of the electrolyte studies in this patient, there is a rise in the serum potassium to slightly elevated levels with no obvious cause. This rise, together with the gradual fall in serum sodium concentration, and a slowly rising N.P.N. just before discharge, suggest the beginning of uremic acidosis even though the phosphate-sulfate-organic acid group of anions does not, as yet, reflect the change seen in the earlier course of the patient. It may be that he will not get into serious difficulty until these anions do begin to show alterations.

Conclusion:

A case of uremic acidosis due to chronic renal failure secondary to hydronephrosis and urethral stricture has been presented from a clinical pathological point of view with especial emphasis on the alterations in blood electrolytes. Of particular note is the relationship of serum potassium concentration to intravenous 1/6 molar sodium lactate therapy, and the progressive reduction of the phosphate-sulfate-organic acid group of anions even though this group was not determined directly in the study.

CASE No. 2 (F. C.)

Clinical Summary:

This 62-year-old white male was admitted with a chief complaint of hematuria of two months' dura-

tion. Eleven years prior to this admission he had a bladder tumor removed transurethrally at another hospital. He was well until two years prior to this admission when hematuria recurred. He did not, apparently, seek medical attention at that time. On admission to this hospital the physical examination was essentially within normal limits. Cystoscopy and bladder biopsy revealed a mixed transitional cell and squamous cell carcinoma, Grade III. On November 3, 1953, he underwent total cystectomy and bilateral ureteroenterostomy of the Mathison type. Clinically the post-operative course was uneventful. The patient was out of bed on the sixth post-operative day and continued to do well. He was discharged on the 20th hospital day on daily sodium bicarbonate therapy.

Discussion:

The laboratory data are given in Figure 3. It can be seen that the plasma bicarbonate shows an almost constant fall post-operatively and reached an acidotic level on the seventh post-operative day. At this time the serum chloride began to rise above the normal limits and the pattern of a hyperchloremic acidosis developed. Two explanations are offered for this electrolyte disturbance in bilateral ureteroenterostomy^{6,7} (1) absorption of chloride from the urine held in the colon and (2) impaired renal function due to ascending infection. The relatively slight rise in N.P.N. over several months, suggests that ascending infection and impaired renal function play little part in the hyperchloremic acidosis which this patient demonstrates.

Ferris and Odell⁸ found in their 141 cases of bilateral ureterosigmoidostomy that hyperchloremic acidosis developed in a few days to many weeks after operation with the majority appearing in the first year. These authors feel that the early development of hyperchloremic acidosis is likely to be due to vigorous isotonic saline therapy post-operatively. In the present case it seems unlikely that 5.5 liters of isotonic saline given over a six-day period would be sufficient to account for the early acidosis.

The fall in serum potassium in this patient coincides both with the onset of bicarbonate therapy and with the onset of the hyperchloremic acidosis. Depression of the serum potassium in this form of acidosis has been observed by many workers.^{9,10} Whether the fall in serum potassium here is the result of the bicarbonate therapy, the acidosis, or both, is not clear. It is of interest that during and shortly after the use of Wangansteen drainage (November 2-6, incl.) 40 mEq. per day were required to maintain the serum potassium at its previous level.

"Gamblegrams" of this patient's electrolyte changes show no consistent alterations of the "undetermined" anions during the hospital course. Ferris and Odell⁸ suggest that some other, as yet unknown, cation is

involved together with sodium in the reabsorption of chloride from the colon. Since the patient shows serum chlorides rising faster than the serum sodium with a simultaneous fall in potassium, such a suggestion is conceivable.

The patient returned as an out-patient for follow-up four months after discharge. His electrolyte pattern at that time is shown in Figure 3. He again shows a hyperchloremic acidosis which is somewhat more pronounced than while in the hospital.

CASE No. 3 (B. C.)

Clinical Summary:

This 73-year-old white female was admitted to the hospital with a chief complaint of urinary frequency. She had noted urinary frequency, polyuria, and polydipsia for several weeks prior to admission. She had had no burning sensation on urination. She had a chronic cough for years. She had noted some exertional dyspnea and ankle swelling but had no chest pain, orthopnea, or paroxysmal nocturnal dyspnea. Her appetite had been poor recently. On physical examination the mouth and tongue were dry. The neck, thorax, breasts and axillae were within normal limits. The heart rate was 88 with a normal sinus rhythm. A grade 2 apical systolic murmur was heard. The liver margin was three fingerbreadths below the costal margin. The spleen was not palpable. There was 2 plus pitting edema of the ankles. No cyanosis was seen. On admission her hemoglobin was 13.0 gms. per 100 c.c. of blood. The white cell count was slightly elevated with increased mature polymorphs. Her initial fasting blood sugar was 532 mg.% and her N.P.N. was 97 mg.%. Only the admission urinalysis showed a positive sugar reaction. In the hospital her blood sugar fell progressively to 100 mg.% on November 15, rose to 189 mg.% on November 18 and returned to 117 mg.% by November 24. Her N.P.N. fell progressively to 80 mg.%. On admission blood cholesterol showed 160 mg.% total (normal 150-250 mg.%), 96 mg.% free cholesterol (normal 38-63 mg.%), and 70 mg.% cholesterol esters (normal 112-187 mg.%). These determinations were not repeated.

Discussion:

This patient obviously was a diabetic without previous known therapy. Additional laboratory data are given in Figures 4 and 5.

The low serum sodium and chloride on admission are consistent with the clinical dehydration which this patient showed and which can be seen graphically in the "gamblegrams" which shows the reduced electrolyte volume on the first two hospital days. This reduced electrolyte volume is the result of the loss of water and electrolytes due to uncontrolled diabetes.¹¹ This patient also illustrates the elevation of the renal threshold for glucose seen in some older diabetics.¹²

Case No. 3 (B.C.)

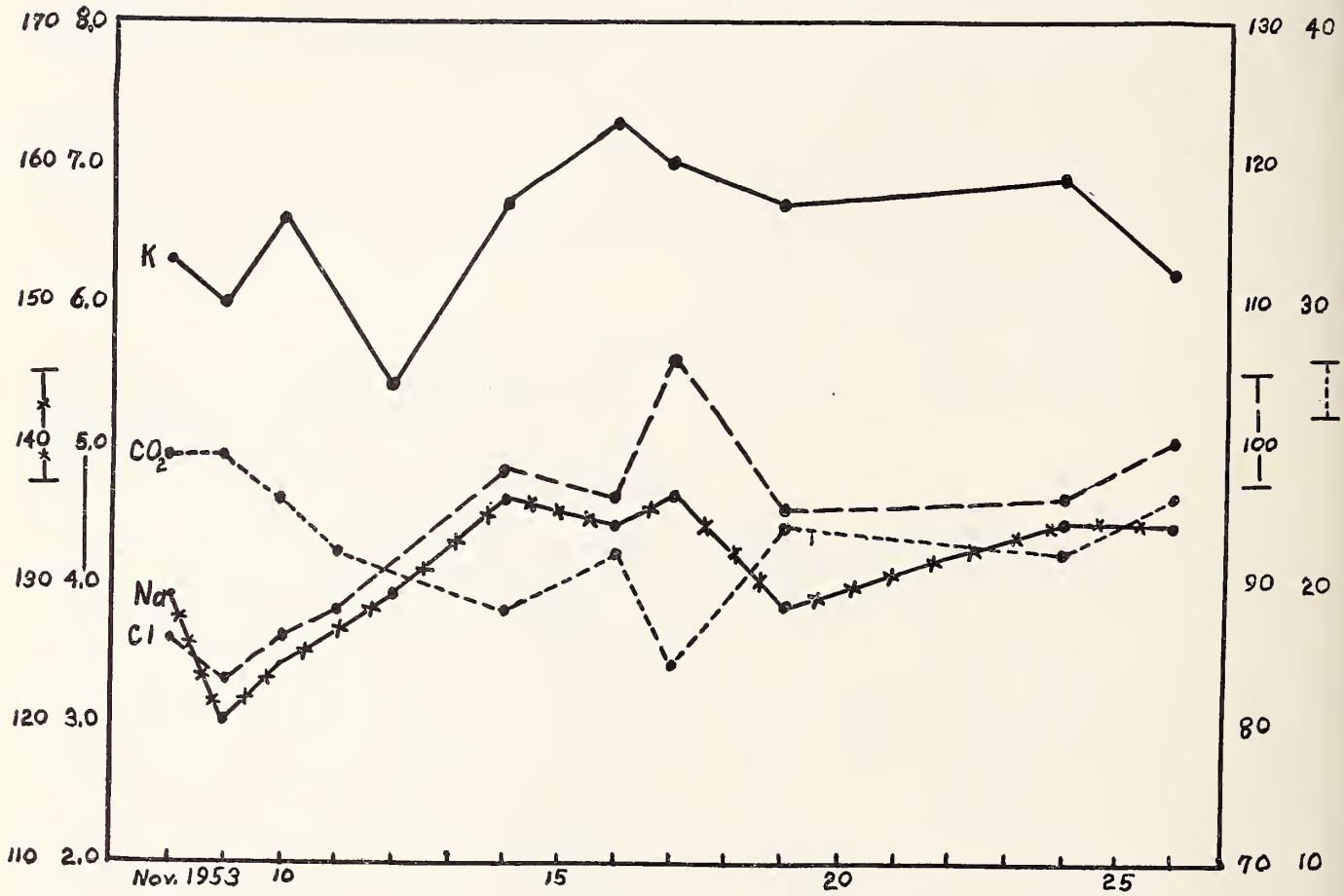


Fig. 4

Her blood sugar was above the normal threshold value for several days, yet her urines showed negative tests for sugar except for the initial specimen when the blood sugar was over 500 mg.%. That there was permanent renal damage was indicated by a persistently high blood N.P.N., and consistently low urine specific gravity after the sugar disappeared from the urine. This, of course, suggests the possibility of Kimmelstiel-Wilson kidneys.

The serum cholesterol studies on admission suggest hepatic insufficiency, but little further can be said about this single observation without other evidence of hepatic damage.

A conspicuous alteration in the serum potassium is seen in this patient. Everyone agrees that there is depletion of total body potassium in diabetic acidosis. The extracellular potassium, however, varies with the stage of the disease,¹³ being low or normal in the developing acidotic stage and rising rapidly in the later stages of acidosis, even though there is depletion of total body potassium.¹⁴ This is confirmed in Nadler's 45 cases of diabetic acidosis in which no patient had a serum potassium below 5 mEq. on admission. In all of these patients there was a fall of serum potassium with insulin therapy. In this

patient a similar fall was apparent after three days of insulin medication, but was short-lived. The rise in serum potassium coincided with the administration of oral sodium chloride. Bland¹⁵ points out that sodium therapy in patients with depleted potassium stores, without the administration of potassium, causes a shift of sodium into the cells and displacement of potassium into the extracellular fluid. Such a mechanism is conceivable in this patient. An alternative explanation of the persistently high potassium is that the patient was uremic and consequently, as Bland points out elsewhere, may have been retaining potassium as a result of concomitant uremia. The persistently low sodium and chloride values after correction of her dehydration are quite consistent with this explanation.

A very interesting alteration of the electrolyte pattern is seen on November 17 after the patient had been 48 hours without insulin. The serum chloride rose, the plasma bicarbonate fell and the blood sugar rose to 189 mg./100 cc. There seems little doubt that these changes reflect a brief diabetic acidosis with a return of all values to previous levels when insulin was reinstituted.

Case No. 3 (B. C.)

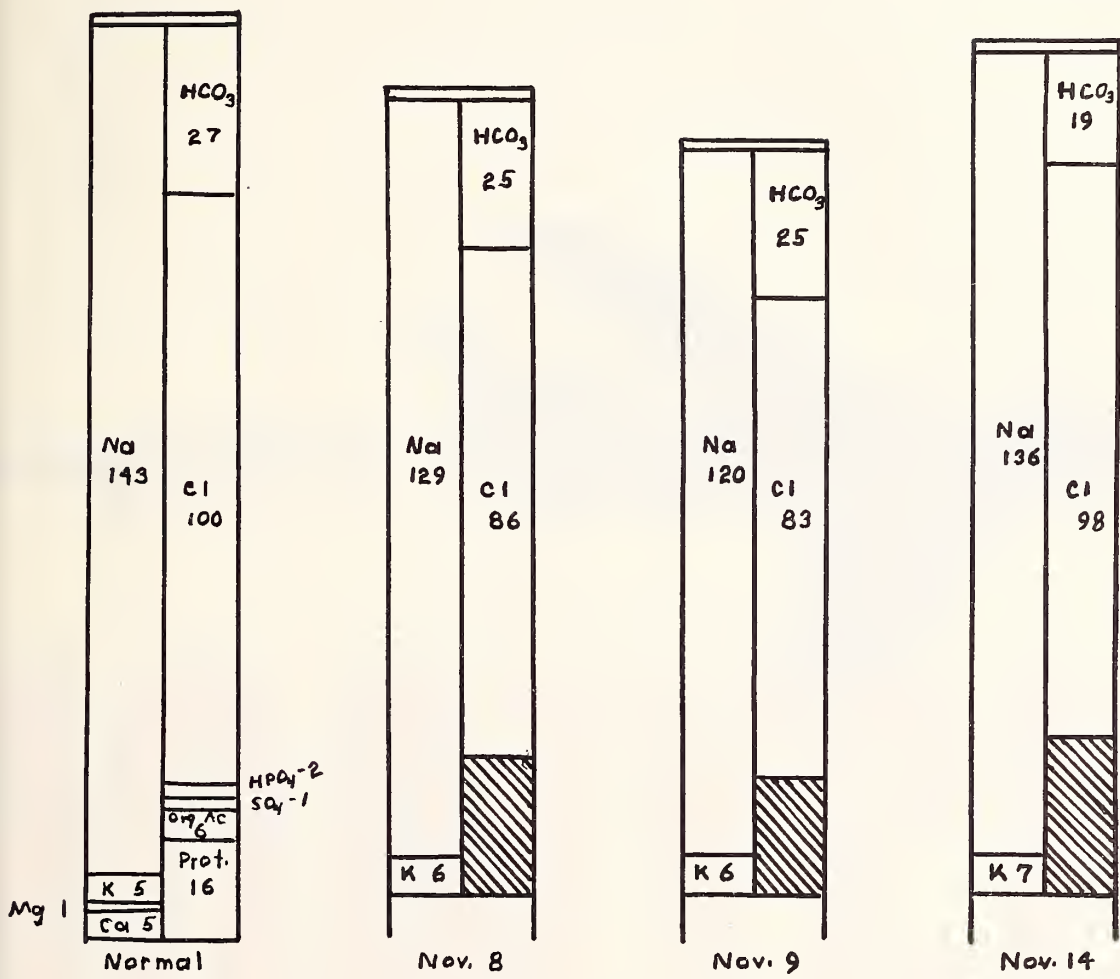


Fig. 5

CASE NO. 4 (A. C.)

Clinical Summary:

This 72-year-old white male was admitted to the hospital on October 28, 1953, with dyspnea, cyanosis and a blood pressure of 178/88. He had a heavy alcohol intake with little solid food for the four years prior to admission. He had a cough which at first was said to have produced pink-stained sputum, but for the two days prior to admission had been non-productive. There was a gradual change in personality with a peculiar "staring" expression of the eyes. Physical examination revealed a temperature of 100° F. (rectal), pulse 108, and respiration 28. He was apparently unable to lie quietly in bed and was continually scratching at his face, abdomen and legs. His speech was slurred. The palpebral fissures were widened. The neck veins were not distended. The tongue appeared bulky, pale and smooth. There was a positive Chvostek sign. The heart sounds were of good quality. The heart rate was regular and there were no murmurs. The abdomen was negative.

Laboratory findings included the following: hemo-

globin of 10.5 gms.% ; slight leukocytosis, normal blood sugar, N. P. N. 122 mg.% rising to 165 mg.%, normal bilirubin, alkaline phosphatase 2.0, thymol turbidity 1.0, normal prothrombin, serum phosphorus 6.8 mg.%, A/G ratio 3.2/2.3, calcium 8.4 mg.%, cephalin flocculation 2 plus in 48 hours.

The electrocardiogram showed a sinus tachycardia and right bundle branch block.

On the fifth hospital day his skin showed purpuric areas. He expired on November 2, 1953.

At autopsy the kidneys were enlarged with pale cortex and dark red pyramids. The adrenals showed a thin, orange cortex with no evidence of tumor. The liver was slightly congested. The cause of death was recorded as uremia with acute renal failure superimposed on an old arteriosclerotic nephrosclerosis. The laboratory data are given in Figure 6.

Discussion:

This patient is included as an example of profound uremia with rapid electrolyte changes which could have caused the patient's death as shown below. The



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Case No. 4 (A.C.)

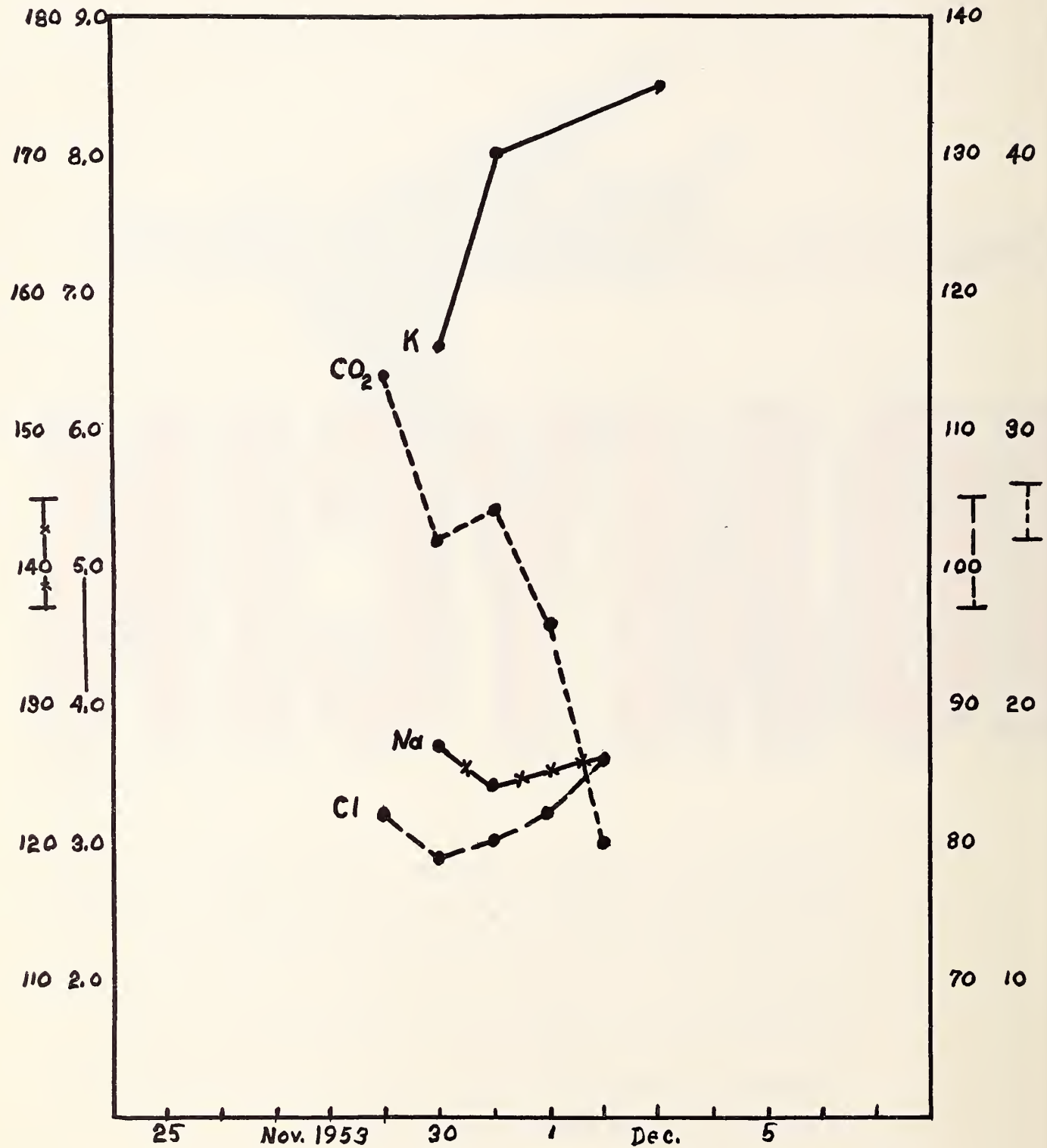


Fig. 6

striking fall in plasma bicarbonate concentration indicates the severity of the acidosis which this patient developed. As noted above, the high serum potassium and low serum sodium and chloride values are consistent with uremic acidosis. It is of interest to compare these changes with those of Case No. 3 who was uremic but not oliguric. Hopper¹⁶ and his associates have reported deaths in chronic renal disease with anuria or oliguria when the serum potassium levels were 8.8-9.0 mEq., especially when the serum sodium concentration was low. Similar results are seen in cases reported by Tarail¹⁷ and by Stewart et al.¹⁸ The ability of carbohydrate administration to prevent the accumulation of potassium in the extracellular fluid by causing a shift of potassium to the intracellular space was reported by these workers, as well as others. Such a shift apparently did not occur in this patient in spite of the administration of 2500 c.c. of 10% dextrose in saline and 2000 c.c. of 5% dextrose in water in 96 hours.

This patient showed no electrocardiographic evidence of potassium toxicity even with a high serum potassium. Lack of correlation between serum potassium values and electrocardiography has been noted by Currens and Crawford.¹⁹ Merrill²⁰ points out that this lack of correlation is particularly true in renal disease.

Summary:

Four cases of electrolyte disturbance are presented with a discussion of the significance of fluctuations occurring while these patients were under observation.

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State AMEF Chairmen To Meet

American Medical Education Foundation state chairmen will kick off the 1955 fund-raising campaign with a meeting Sunday, January 23, at the Sheraton Hotel, Chicago. This fourth annual meeting will launch officially the medical profession's concerted efforts to raise voluntary funds for the nation's medical schools.

Primary purpose of the one-day session is to exchange ideas on local promotions. Representatives from every state as well as regional auxiliary chairmen will be on hand for the meeting.

Operation PR Action

The ABC's of medical public relations are neatly spelled out in AMA's new "County Medical Public Relations Manual." Prepared by the Department of Public Relations as a working manual for county medical societies, this booklet comprises the first comprehensive textbook on medical PR. The Manual explains how to organize for PR action, outlining dozens of PR projects which local medical societies can conduct to win the respect and confidence of the community. State medical societies will receive a supply of Manuals about December 1 for distribution to county PR leaders.

THE CLINICAL EVALUATION OF A LIQUID SUGGESTED FOR PSORIASIFORM PROBLEMS OF THE SCALP

MARTYN A. VICKERS, M. D., Bangor, Maine*

The author is fully cognizant of the problems besetting the physician in the treatment and control of psoriasis and psoriasiform type dermatitis of the scalp. With these problems in mind, the writer decided to undertake a clinical evaluation of a liquid suggested for psoriasiform problems of the scalp.

This is a specially prepared mixture, combining the astringency of phenylic acid (less than 1% by volume of the mixture) with normal saline solution, in a mineral oil base. This mixture, furthermore, has a potential hydrogen ion concentration of 5.5 which approximates the Ph of normal skin.

In making this clinical study the author chose 31 of his patients, each one of whom had a history of chronic psoriasis and psoriasiform type dermatitis of the scalp of from one to twenty years in duration. These patients had all received treatment, at one time or another, and had collectively tried many preparations advised in such cases without appreciable success.

The present clinical study has now been carried on for more than a year, and the results seem to warrant further evaluation on a larger group.

Each of the studied patients was instructed to apply the liquid directly to his or her scalp with the aid of a small dropper, thus assuring immediate and direct contact by the preparation with the lesion areas, and avoiding unnecessary messing of the hair.

This procedure reasonably assured the author of the patient's coöperation.

Each patient was told to apply the liquid twice daily for a period of five days, then to cleanse the hair and scalp with a bland, non-irritating shampoo, and start a new five-day cycle; and that this was to be continued until the lesions disappeared.

Of the 31 patients tested, seventeen were free of all lesions within ten days following the use of this treatment, and six were freed of all symptoms within twenty-one days. All twenty-three patients were then able to prevent the recurrence of their former conditions by the use of but one further application per week of the liquid. Further study of these cases shall be made to determine whether the time interval between supplementary treatments can be safely extended.

Four more of the patients were also relieved by the use of this liquid, but they required continual daily applications thereafter to prevent recurrence and to keep the condition under control.

The remaining four patients in the study showed no beneficial results. In fact, one of these four complained of an irritation, following treatment, which he stated he had never previously observed.

A simple chart establishes the results obtained with this product. Of the studied group, 75% were relieved within a period of three weeks.

CHART OF PATIENTS

Period of Time Required to Obtain Relief	Patients Relieved Requiring Subsequent Treatments Weekly	Patients Relieved Requiring Subsequent Treatments Weekly	Patients Receiving No Relief	Totals
Within 10 days	17			17
Within 21 days	6	4		10
No Relief			4	4
Totals	23	4	4	31

The treatment of psoriasis and psoriasiform type dermatitis has always been a great problem. Since no specific treatment is available to date, a constant search is carried on to find one that will provide a more satisfactory form of symptomatic relief.

In addition there is the patient's reaction to a medication. There is the possibility that it may fail to elicit his coöperation for cosmetic reasons. The appearance and odor of the treatment plus the period of time required to make the applications at all effective are all important factors.

This liquid apparently overcomes these underlying influences. Properly applied, it does not affect the appearance of the patient; nor is there any lingering odor for any appreciable period of time.

In conclusion, it is the opinion of the author that this liquid is a valuable adjunct to the physician's armamentarium in the treatment of chronic scaling dermatoses of the scalp.

(Material for this article, P. & S. Liquid, was furnished through the courtesy of the Chester A. Baker Laboratories, Inc., 543 Boylston Street, Boston 16, Massachusetts.)

* From the Allergy Service, Eastern Maine General Hospital.

ASPHYXIA AND RESUSCITATION OF THE NEWBORN A SYMPOSIUM

FREDERICK C. EMERY, M. D., DONALD F. MACDONALD, M. D., and PHILIP B. THOMAS, M. D.,
Bangor, Maine*

Dr. Emery:

The magnitude of the problem of asphyxia of the newborn can best be appreciated by the review of a few statistics. By definition, asphyxia is said to be present when an infant fails to breathe after thirty seconds have elapsed from the time of full delivery. Neonatal deaths are those occurring in the first month of life. Bundesen¹ states that in 1952, in Chicago, 35.6% of 10,000 neonatal deaths occurred on the first day of life. Infants dying in the first hour of life represented 27% of the deaths in the first eight hours. Deaths in the first eight hours were 66.5% of the natal day deaths. Those dying in the first three days of life represented 73% of the deaths of the first month and 52% of the infant mortality of the entire first year.

COMPARATIVE STATISTICS

A comparison of death rates with those of 1912 shows that there has been little reduction in the natal day death rate over a period of forty years. In 1912, in Chicago, the natal day death rate was 11.1 per one thousand live births. In 1952 it was 9.4 per one thousand live births. The rate for neonatal deaths in 1912 was 46.2 per one thousand live births while in 1952 it was 18.9, a reduction of twenty-seven per cent. The reduction of infant mortality during the first year was from 118.6 per one thousand live births in 1912 to 26.4 per one thousand live births in 1952. Similar figures from the rest of the country show a marked reduction of the first year mortality, a moderate reduction in the number of neonatal deaths and practically no reduction of natal day deaths. The recent literature demonstrates a justifiably increased interest in these natal day deaths.

CAUSES

Arey and Dent² discuss the causes of fetal and neonatal deaths with an analysis of 102 autopsies to show that intrauterine anoxia is the leading cause of death in this group. They state that the anoxia is due to excessive aspiration of amniotic fluid, probably caused by fetal distress. The second leading cause of death is pulmonary hyaline membrane disease.

In the cases of hyaline membrane disease the duration of life varied from four to forty hours. The lesion appeared to be caused by forceful inhalation,

sweeping the contents of the trachea and bronchi into the bronchioles and alveoli. These contents plaster up against the walls of the alveoli, forming a lining of hyaline-like material that interferes with the gaseous exchange. The membrane is not seen in stillborn infants or in those who live less than one hour. It is most common in premature infants and in mature infants delivered by section. It may be seen in any infant who has been through some complication of labor. Its presence may cause an adsorptive type atelectasis by blocking the small bronchioles.

EXPLANATION OF HYALINE MEMBRANE

The nature of the membrane is in dispute. Some feel it is due to amniotic fluid; others consider vernix or meconium to be the cause. More recently it has been thought due to a local reaction to injury to the epithelial lining of the alveoli. Blystad³ thinks that it consists of a concentrated protein derived from amniotic fluid, and claims to have reproduced the membrane in animals by repeated intratracheal injections of amniotic fluid. Arey and Dent² offer no explanation as to its make-up, but feel that any attempt to explain it should take into consideration the following facts:

- a. It is seen only in live born infants.
- b. It is most frequent in premature infants.
- c. It occurs in mature infants delivered by section.
- d. A similar lesion may be found in older children or adults who have x-ray pneumonitis, rheumatic pneumonitis, influenza pneumonitis or sulfonamide poisoning.

Behrle, Gibson and Miller⁴ have reported some interesting work on the expansion of the lungs of newborn infants. The unexpanded lungs of forty-three infants were removed at autopsy and were expanded with measured amounts of negative pressure. It took ten to thirty centimeters of water pressure to overcome the initial cohesive tension of normal lungs. In premature infants and those with hyaline membranes over fifty centimeters of pressure were required. The presence of blood, meconium, vernix or amniotic fluid required no increased pressure above that needed to expand normal lungs.

Parmalee⁵ discusses the work of Potter who made histological sections of fetal lungs at various stages of gestation and showed an increasing development of the capillaries in the alveolar septa with advancing fetal age. At term the septa consist almost entirely of capillary loops with only scattered epithelial cells. This is highly favorable to efficient gaseous exchange

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when air-breathing is initiated. This is important in the physiology of premature infants. The less mature the infant, the less capillary bed will be present and the exchange of gases will be less efficient. If birth occurs before a certain minimal stage there will be insufficient capillary development to sustain life.

The infants causing most concern are those whose respiratory centers are damaged by anoxia of prenatal or natal origin, by birth injury or by mechanical obstruction to the airway. It is now being recognized that the effects of anoxia are widespread and are not confined to the mechanism of respiration. Perhaps the most important effect is on the integrity of the capillaries. Damage may result from hemorrhage into the lungs, pleurae, brain, meninges or other tissues. The recognition of intra-uterine anoxia of long duration is of considerable significance. Clifford's study⁶ of these effects due to placental degeneration in the post-mature pregnancy is very important, and should be a stimulus for developing accurate methods for the determination of the exact age of gestation.

Dr. Macdonald:

Ideal obstetrics demands that every child not congenitally deformed be delivered alive and uninjured. Our immediate concern is the problem of asphyxia neonatorum. There are usually a combination of several clinical factors occurring to produce asphyxia. A knowledge of these factors is, in many cases, the key to the successful delivery of a healthy child. One should distinguish between those factors which exist prior to labor and those factors which occur during labor and at the time of delivery.

MATERNAL FACTORS INDUCING ASPHYXIA

There are a number of important pathological conditions which may exist within the mother prior to labor which may result in asphyxia of the newborn infant. Profound anemia in the mother, whether primary or secondary, produces a corresponding relative anemia in the infant with resulting asphyxia. Acute or chronic kidney disease in the mother is often aggravated by pregnancy. There is frequently a resulting toxemia and the toxic products are passed on to the baby producing asphyxia by depression of the respiratory centers. Cardiac failure in the mother results in anoxia of the maternal blood stream which is transferred to the unborn infant with resulting anoxia of the fetal brain. Metabolic disorders, such as diabetes mellitus, in the mother may be an important factor in neonatal asphyxia. Chronic pulmonary disease may produce varying degrees of anoxia in the mother and may thus lead to fetal asphyxia. Syphilis transmitted from the mother to the fetus may produce pathological changes in the brain, lungs or heart which may lead to asphyxia of the infant.

FETAL FACTORS

There are other conditions leading to asphyxia in which the pathology is primarily in the fetus. Included in this category are various congenital defects, diaphragmatic hernia, hypoplasia of the mandible, congenital debility of the infant and prematurity. Erythroblastosis fetalis which depends upon incompatible blood groups of the mother and infant may result in asphyxia through the destruction of the infant's erythrocytes.

OBSTETRICAL FACTORS

The asphyxia-producing factors which occur during labor and at the time of delivery are factors more readily controlled by the obstetrician. Asphyxia of the newborn is more common when labor is prolonged. This explains why first babies are more usually affected. When labor is prolonged the usual fetal pathology is cerebral hemorrhage and cerebral edema. Because of this association we feel that it is quite reasonable to adopt a general rule that, providing there is good labor, delivery should be effected after two hours of full dilatation in mid-pelvis without progress, or in one hour on the perineum without progress.

The type of delivery may have considerable influence in the production of asphyxia neonatorum. The incidence of asphyxia is directly proportional to the amount of trauma which the baby suffers. When speaking of traumatic deliveries one usually thinks of versions, mid-forceps and breech extractions, but one should not overlook the trauma associated with two other types of deliveries. A rapid, spontaneous unassisted delivery can produce intracranial damage by sudden changes in the size of the fetal head causing tentorial tears. Cesarean section is associated with a surprisingly high infant death rate. The major cause of death is aspiration atelectasis. Because of this factor we routinely aspirate the stomach and trachea of all section babies immediately after birth before they leave the operating room.

Other important considerations associated with labor and delivery are prolapse and compression of the cord, abruption of the placenta with hemorrhage and impaired blood supply to the fetus, ruptured placental vessels (velamentous insertion), a tight cord with compression and edema of the glottis and throat such as may occur in face presentations.

Analgesics have often been blamed for asphyxia in the newborn, but when used with caution they play a minor role in the production of asphyxia.

DRUG FACTORS

Dr. Thomas:

Analgesic drugs and anesthetic agents administered to the mother during labor or prior to Cesarean section are frequently fundamental factors in the production of respiratory depression in the infant.

Narcotics such as morphine, demerol, dromoran and barbiturates, when used in conjunction with general anesthetics such as ether, chloroform, trilene, nitrous oxide, ethylene and cyclopropane all cross the placental barrier and increase the incidence of respiratory depression of the newborn. These analgesic drugs should be used carefully and in the smallest amounts possible to accomplish the desired end.

Spinal, caudal and local anesthesia, however, do not depress fetal respiration in the absence of hypotension. If the maternal systolic blood pressure is maintained at 80 mm.Hg. or above these agents have no demonstrable effect on the baby. Accordingly, somewhat larger doses of barbiturates and narcotics may be used during labor or for preoperative medication with these anesthetics than when general anesthesia is given.

It is important to remember that the infant who is premature or who is in distress from toxicity or prolonged labor, or is anoxic from maternal blood loss will not tolerate depressant drugs as well as the full-term infant. In such cases the dosage should be kept at a minimal level.

RESUSCITATION METHODS

When an infant fails to breathe spontaneously at birth or does so ineffectively or inadequately, resuscitation becomes necessary. All resuscitation procedures are directed at correcting anoxia which is the primary physiopathologic change. If a simple, safe routine is adopted, valuable time is not wasted in ineffective or even harmful measures. More rapid and efficient resuscitation is the result.

The establishment and maintenance of an airway is the first requisite in all forms of resuscitation. Gentle aspiration of the nares, mouth and pharynx to remove any mucus, amniotic fluid or blood is often all that is necessary in resuscitation of the infant who is only mildly depressed.

A fifteen to thirty degree Trendelenburg position to aid in gravity drainage of secretions and foreign material is of value. Excessive head-down position should be avoided because of increasing the possibility of cerebral hemorrhage.

In the moderately or severely depressed infant, aspiration of the trachea and upper bronchial tree should be carried out at once. If spontaneous respirations do not follow this procedure, endotracheal intubation should be performed without delay.

Gentle cutaneous friction and passive movements of the extremities after the establishment of a clear airway will often initiate breathing in the mildly depressed infant. Manhandling in the hope of stimulating the respiratory center with efferent impulses is not justified because of the possibility of producing visceral lacerations and cerebral hemorrhage.

OXYGEN ADMINISTRATION

Oxygen should be given to all infants who are de-

pressed. Tidal exchange is small, respirations are often irregular and the lungs are only partially expanded. Arterial oxygen saturation is usually low. Oxygen can be given by simple insufflation or by inhalation from an infant mask and bag. If the infant can remain pink in room air after good oxygenation has been once established, then oxygen can usually be discontinued provided that he is observed carefully for several hours.

It is now generally believed that carbon dioxide is not justified in the treatment of the depressed infant. Yandell Henderson recommended the use of ninety-three per cent oxygen and seven per cent carbon dioxide. Some people have advocated as high as thirty per cent carbon dioxide. It is now known that carbon dioxide in concentrations greater than ten per cent has anesthetic properties and actually depresses respiration.

In the presence of a depressed respiratory center stimulation of respiration is produced not by carbon dioxide but by efferent impulses from the carotid and aortic bodies, from the respiratory tract, joints, skin and subcutaneous tissues.

When the newborn remains apneic and therefore atelectatic, the fundamental problem in resuscitation is that of initiating an inspiratory gasp which will start expansion of the lungs. No infallible method of overcoming atelectasis has yet been developed. All known methods of artificial respiration have been used in an attempt to exert sufficient force to overcome the resistance of atelectatic lungs.

In general the methods of artificial respiration employed in the resuscitation of the depressed newborn fall into three major classifications:

- I. Intermittent exaggeration of negative intrapleural pressure.
 - A. Manual artificial respiration plus oxygen
 - B. Rocking method of Eve
 - C. Drinker type respirator
- II. Intermittent increase of pressure in alveolar spaces.
 - A. Transpharyngeal insufflation
 1. Mouth to mouth insufflation
 2. Kreiselman resuscitator
 - B. Endotracheal insufflation
 1. Flagg technique
 - C. Alternating increase and decrease of alveolar space pressure
 1. Ericson and Johnson resuscitator
 2. Emerson resuscitator
 3. Stephenson resuscitator

There are four recent additional methods. That of Tovell consists of the use of curare plus the Drinker respirator. That of Cross and Roberts employs electrophrenic respiration. That of Bloxson utilizes positive pressure oxygen with an air-lock re-

suscitator.⁷ Another is the use of intragastric oxygen.

Regardless of the method used the warmth of the infant should be maintained by blankets, tub or incubator throughout the resuscitative period and thereafter.

DRUG ADMINISTRATION

The use of stimulatory drugs requires considerable caution. Epinephrine frequently precipitates ventricular fibrillation and is therefore contraindicated in these infants. The respiratory stimulative properties of alphalobeline are variable in occurrence, temporary in duration, are associated with cardiac depressant properties and appear only in doses that are at convulsant levels. Pituitrin, camphor, coramine, picrotoxin, metrazol, caffeine and strychnine have all been used. The use of such drugs is often followed by more severe depression than that which it was intended to overcome and recovery from effects of cerebral depressants occurs distinctly more rapidly when no analeptic is given. These drugs raise the demand for oxygen above the available supply and therefore their use should be questioned. They may, in fact, be harmful.

Nalline is a narcotic antagonist which has been advocated for use in the prophylaxis and treatment of neonatal depression in infants born of mothers depressed from opiates. It is said to reduce the need for infant resuscitation and the time required to establish breathing. It is well tolerated and does not cause convulsions or further depress respiration.

Bronchoscopy is of great benefit and may be lifesaving in the infant who is suffering from lower respiratory obstruction which is not relieved by the measures previously mentioned.

Studies on *aspiration* of gastric contents of babies delivered by Cesarean section show that the volume ranges from 0-40 c.c. and that the character of the fluid is usually a clear, yellowish, viscid liquid containing white flecks of caseous material and, at times, meconium. It is generally considered that regurgitation and aspiration of such fluid may result in respiratory distress. The use of gastric suction has produced a fifty per cent reduction in both the gross and corrected fetal mortality rates in infants delivered by Cesarean section.

REVIEW OR SUMMATION

Dr. Emery:

In the most severe stage of asphyxia, the breathing stops or is infrequent. Cyanosis becomes pallor. The muscles are flaccid, the pulse weak, fading and irregular. There are no reflexes. This flaccid stage shows that the infant is dying. Not only must the airway be established and oxygen be administered,

follow-up supportive methods must also be used. It is important to stress that laryngoscopic or bronchoscopic tracheal aspiration should be done by someone trained in the use of these instruments. If the infant survives the initial period of resuscitation, the use of aerosol mists is indicated. This relieves mucus secretions and combats traumatic edema of the laryngeal tissues. Antibiotics are used. Gastric aspiration should be done as an initial procedure and should be repeated three or four times in the first few hours. Feedings are withheld as long as necessary to guard against aspiration by vomitus. One does not need to worry about fluid balance in these newborns. They can be carried for several days by parenteral means.

The use of aerosol mists has been a forward step in the aftercare of the asphyxiated newborn. These are used in incubators or in special humidifiers producing tiny droplets which are carried throughout the respiratory tree. Oxygen is the usual motivating force. The wetting action speeds liquefaction of aspirated material, and the emulsifying properties assist in breaking up the thick secretions. The wetting agents also decrease the cohesive tension of the alveoli. Glycerine is used to lower the vapor pressure of the watery solutions, thus prolonging the life of the droplet. Propylene glycol has been used because it is long-lasting and is said to have some antibiotic properties. Neosynephrine may be added to combat edema, and the antibiotics may be included to control potential infection.

At present, the pediatrician rarely takes an active part in the resuscitation of the asphyxiated newborn infant. The issue is decided one way or another before he arrives, but it is felt that with the growing interest of all physicians in better prenatal care, good obstetrical management and safer anesthesia, the need for resuscitative measures can be reduced. Thus the appalling natal day mortality can be lowered, making this most important day of an infant's life the safest day of his life.

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The Journal of the Maine Medical Association

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The Pendulum Swings

Not so very long ago many of the widely circulated, widely read magazines were keeping the medical profession on the griddle. It seemed to be fashionable to pick on the practice of medicine; yes even to question the integrity of the profession. Some recent events, however, nationally and locally, have displayed a warm and affectionate regard for the physicians in our midst.

Back in October, the Erie County (Pennsylvania) Medical Society together with leaders of the community in Erie, paid tribute to the A.M.A. President-Elect Elmer Hess. Distinguished guest speakers referred to the doctor as a great American and George J. Mead, President of the Board of Trustees of St. Vincent's Hospital, said: "Speaking for his thousands of patients—if they could speak directly to the American Medical Association—they would universally say 'he has been loyal and kind in the practice of medicine, irrespective of means—poor and rich.'" These were good tidings.

More recently in our own New England an essay and an editorial appeared in *The Boston Herald*. The essay by Westbrook Pegler, written at the time of Doctor Sara Jordan's birthday, recounted her early days in Medical School and her steady advancement to the eminent position which she occupies today in the field of gastroenterology. It was a well merited and good report. The editorial entitled "Across Boundaries" related a story about Doctor Samuel A. Levine and Charles E. Merrill. The boy from Lozma, Poland, becoming through industry and application a leading cardiologist, acquires as a patient, Charles E. Merrill, a direct descendant of Myles Standish and John Alden, a successful investment banker. They became friends and now Mr.

Merrill has made a gift of \$400,000 to Harvard Medical School to endow a professorship in medicine. He has requested that it be named after Dr. Levine. This is more good news.

GOOD TIDINGS IN MAINE

We want to take the rest of our space in this issue of the JOURNAL to comment on tributes paid to members of the profession within the borders of our own State. On the 11th of November, the good people of Sanford came together to dedicate an Athletic Stadium which was to be named the Stephen A. Cobb Stadium. Dr. Cobb, or Steve to his innumerable friends, a Past President and tower of strength to our Association, a Maine boy born and bred, has practiced in Sanford for lo these many years. During all of these years he has given generously of his substance and talents to the athletic program of the Sanford boys and girls. He knew them all, took care of them, encouraged them and set them a standard of good sportsmanship in the American Way of life. We call this good news and a grand tribute from the home folks.

On the preceding day in Lewiston at 7.30 P. M. thousands of citizens of the community crowded into the Armory to pay tribute to another one of our members, Dr. Gard W. Twaddle. Doctor Gard was also born and bred in Maine. He was honored for his good citizenship and unselfish contribution to the welfare of the community and his devoted service to medicine; especially his extraordinary experience in the practice of obstetrics; which embraces the delivery of over 7000 babies into the world.

At the Sanford celebration announcement was made that all contributions to the occasion would be

used to complete the Cobb Stadium. And at Lewiston it was announced that any and all donations would be used to establish a trust fund "for the purpose of providing financial assistance to or in behalf of needy and deserving young women in the furtherance of or

the continuation of their training or education for the nursing profession."

We are proud to publish an account of these events. We hope that news of them will reach into the homes of our doctors and friends; they are good tidings.

Christmas Seals and A Golden Anniversary

On the 22nd of November the National Tuberculosis Association opened its 48th Annual Sale of Christmas Seals. During these 48 years the proceeds from the sale of seals has supported an effective campaign along many lines against tuberculosis.

The mortality rate from tuberculosis has decreased about 50 percent since the National Tuberculosis Association was organized. Gratifying indeed, however, it does not mean that the disease has been eradicated. It does indicate that the money so

generously contributed by the public has been wisely used. With continuing help it is possible to reach the goal of eradication. A great deal needs to be done; case finding, health education, research and rehabilitation must be carried forward.

The Association has celebrated recently its 50th Anniversary with justifiable pride in its record. For 50 years, this voluntary organization with 3,000 chapters throughout the country has brought health and happiness to thousands of our friends and neighbors.

Seasons Greetings

With the shorter days signalling the year's end, we glance back over the year and reflect on past events in the Journal office. We see that nothing spectacular has happened. We have, with the help of the Editorial Board and the incomparable Mrs. Kennard, managed to have a JOURNAL in the hands of our members every month. Sometimes disappointments slowed us up and occasionally an unexpected treasure gave us a boost. We have enjoyed all of it. And we

would like to have our subscribers enjoy the JOURNAL. More notes, more letters, more articles will be cheerfully welcomed. Every member of the Association will be the gainer if you help us to publish a better JOURNAL.

To Mr. Payson, Mrs. Cartwright and Mrs. Kennard we express uninhibited thanks. And to each and every member of the Association we extend the Seasons Greetings.

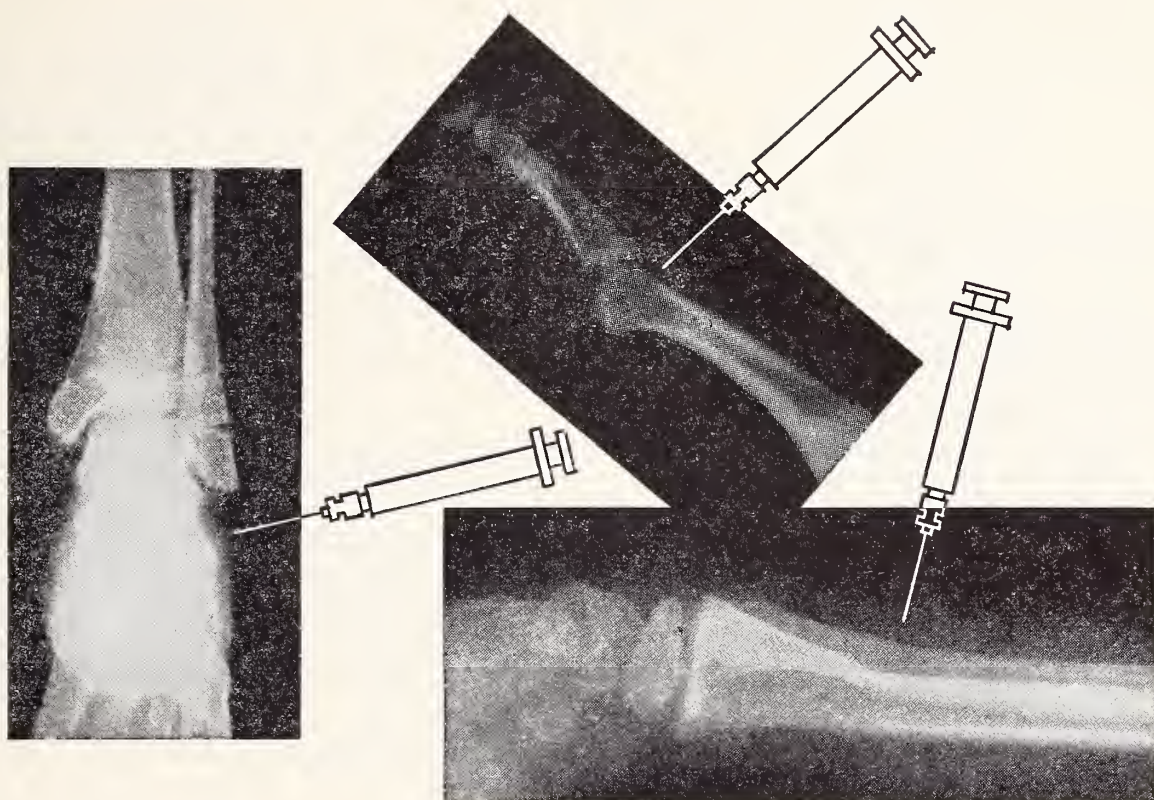
Safeguarding the Worker's Health

Building an effective health program for American industry utilizing the facilities of medicine, government, management and labor will be emphasized at the 15th annual Congress on Industrial Health. Sponsored by AMA's Council on Industrial Health, the Congress will be held January 25 and 26, 1955, at the Shoreham Hotel, Washington, D. C.

Following the general theme—"Goals of Preventive Medicine"—panel discussions will be presented on: (1) Industrial health as a major component in

community health; (2) Training and recruitment of qualified professional personnel; (3) Medical care plans; (4) Workmen's compensation and rehabilitation, and (5) Health in the atomic age, stressing the need for modern protective methods of safeguarding the worker's health.

A pre-conference session for medical society committee members will be held January 24 to consider problems of special interest to the medical profession.



Use of Alidase® in Closed Wounds: Contusions, Sprains, Dislocations, Simple Fractures

In traumatic surgery¹ where "definitive treatment . . . is often delayed while the surgeon waits for nature to dispose of hematoma and oedema" Alidase is an efficient means^{1,2} of accelerating dispersion of accumulated fluids.

Swenson² has described his highly successful results with Alidase in various types of closed wounds. He summarized them as follows:

To remove local fluid accumulations in contusions or bruises, "The usual dose, 500 viscosity units Alidase® mixed in a small amount of normal saline, is injected into the localized fluid. Mixing the hyaluronidase in 1 per cent procaine solution will also produce local vasodilatation, relief of local pain and more rapid absorption of the fluid mass. This method can also be applied to traumatized bursae or synovial spaces which do not respond to repeated aspirations."

The point of maximal pain is infiltrated with 10 cc. of a 1 per cent procaine solution to which 500 viscosity units of Alidase have been added. With this simple technic, a high percentage of successful results has been obtained.

Alidase may be used to advantage to produce more rapidly a short-acting, complete block anesthesia and to facilitate reduction in subluxation or complete dislocations of the interphalangeal joints. When anes-

thesia is required for fracture reduction, local block anesthesia can be simplified by adding Alidase to the anesthetic solution. Alidase also tends to decrease local edema and hematoma formation.

Fluids administered with Alidase are rapidly absorbed from subcutaneous tissue. The simplicity of hypodermoclysis avoids the cumbersome arm board, permits convenient administration with little or no pain or swelling, is vein-sparing and saves nursing time in such conditions as burns, postoperative states, toxemias and parenteral alimentation.

Alidase (brand of hyaluronidase) is supplied in serum-type ampuls of 500 viscosity units. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

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COUNTY SOCIETY NOTES

Hancock

October 13, 1954

A regular meeting of the Hancock County Medical Society was held on October 13, 1954, at the Hancock House, Ellsworth, Maine. There were thirteen members and one guest present. The meeting was opened by the president, Dr. Mason Trowbridge. A motion was passed that the secretary should write to the widow of the late Dr. Robert W. Belknap, President of the Maine Medical Association, to express the society's regrets on his death.

The speaker of the evening was Dr. Joseph Memmelaar of Bangor, who gave a very interesting and instructive talk on Hematuria, which was followed by a question and answer period.

November 10, 1954

A regular meeting of the Hancock County Medical Society was held on November 10, 1954, at the Hancock House, Ellsworth, Maine. There were ten members and one guest present. The meeting was opened by the vice president, Dr. Charles H. Knickerbocker. A resolution by the Maine Academy of General Practice opposing the recent increase in malpractice insurance rates in Maine was read. Following some discussion a motion was passed that this society go on record as favoring the resolution of the Maine Academy of General Practice and that our councilor and the M.A.G.P. be notified thereof.

Dr. Robert Ohler, of Togus, gave a very interesting talk on The Risk of Surgery in Cardiac Patients, which was followed by a general discussion.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Kennebec

October 21, 1954

A regular meeting of the Kennebec County Medical Association, which was held at the Elmwood Hotel, Waterville, Maine, October 21, 1954, began with dinner served to twenty-six members and guests at 7.00 P. M.

Following a brief business meeting, the president, Dr. Charles E. Towne, introduced the speaker of the evening, Dr. Thomas J. Anglem, Assistant Professor of Surgery, Boston University School of Medicine. Dr. Anglem's subject was Surgery of the Biliary Tract. He brought out a number of interesting and important points and discussed methods employed in differential diagnosis. A very interesting, clear and concise discussion by one obviously well versed. A general discussion was followed by adjournment.

November 18, 1954

A regular meeting of the Kennebec County Medical Association was held November 18, 1954, at the Veterans Administration, Togus, Maine. The usual good dinner was served to forty-one members and guests.

The president, Dr. Charles E. Towne, presided at the business meeting, during which he appointed a nominating committee consisting of the following members, Clarence R. McLaughlin, M. D., Chairman; Frederic B. Champlin, M. D., and Lee W. Richards, Jr., M. D. Lena M. English, M. D., of Togus, was elected to membership.

The speaker of the evening, David Littman, M. D., of West Roxbury, Massachusetts, was introduced by Dr. Robert Ohler of Togus. Dr. Littman's subject was Heart Failure. He graphically discussed the whole cardio-renal physiology and inter-relation, the various hormones, resins, salts, electrolytic alteration in congestive failure, therapies and stressed morale and freedom from concern. A most interesting lecture amplified by blackboard charts. Much discussion followed, even after adjournment.

A. H. MORRELL, M. D.,
Secretary.

Penobscot
November 16, 1954

Dr. Asa C. Adams, of Orono, was elected President of the Penobscot County Medical Association at the annual meeting of the group on Tuesday, November 16, 1954, at the Bangor House, Bangor, Maine. Dr. Herbert C. Scribner, of Bangor, was re-elected Secretary-Treasurer.

Dr. George W. Mitchell, Professor of Gynecology and Chairman of the Department of Obstetrics and Gynecology, Tufts College Medical School, and Chief of Gynecology, New England Center Hospital, was the guest speaker. Dr. Mitchell's subject was Urinary Incontinence in the Female.

York
November 10, 1954

There were fifteen members and two guests present at the November meeting of the York County Medical Society at Hillcroft Inn, York Harbor, Maine. A fine steak dinner was followed by the meeting.

Dr. Burton L. Olmsted of Portland, guest speaker, presented an interesting talk on Tumors of the Skin.

The following members were appointed to serve on the Nominating Committee, Willard H. Bunker, M. D., and Charles W. Kinghorn, M. D.

The annual meeting of the society will be held at the

Kennebunk Inn, January 12, 1955. Samuel Marshall, M. D. of the Lahey Clinic, will be the speaker. Dr. Marshall's subject will be Cancer of the Stomach and Peptic Ulcer.

CHARLES W. KINGHORN, M. D.,
Secretary.

New Members
Cumberland

Warren C. Baldwin, M. D., 42 Deering Street, Portland.
Gerard O. Fecteau, M. D., 22 Arsenal Street, Portland.
Clifford W. Gates, M. D., Gorham.
Morton McMichael, M. D., 73 Deering Street, Portland.
Raimunds Pavasars, M. D., Pownal State School, Pownal.
Daniel P. Storer, M. D., 12 Deering Street, Portland.
Joseph Ventimiglia, M. D., 22 Deering Street, Portland.

Kennebec

Lena M. English, M. D., Veterans Administration, Togus.

Deceased
York

Chrysaphes J. Xaphes, M. D.—Biddeford, December 9, 1954.

NEWS AND NOTES

Portland Medical Club
78th Annual Meeting

There were sixty-one members and two guests present at the 78th annual meeting of the Portland Medical Club on Tuesday, December 7, 1954, at the Cumberland Club, Portland, Maine. The retiring President, Dr. Edward A. Greco, presided.

Dr. Francis M. Dooley, of Portland, presented the annual oration, which was entitled Medicine is an Art.

The following officers were elected for the coming year:

President, Roderick L. Huntress, M. D., Portland.

Vice President, Franklin F. Ferguson, M. D., Portland.

Secretary-Treasurer, Alice A. S. Whittier, M. D., Portland.

Committee on Outside Relations: Bernerd H. Burbank, M. D., Chairman; Philip S. Fogg, Jr., M. D., and Francis H. Fox, M. D.

Liaison Committee: Howard R. Ives, Jr., M. D., Chairman; Howard M. Sapiro, M. D., and Albert W. Moulton, Jr., M. D.

Board of Censors: Edward G. Asherman, M. D., Chairman; Harold L. Osher, M. D., and Warren C. Baldwin, M. D.

Dr. G. Hermann Derry, Jr., was Chairman of the Committee on Arrangements for this meeting, and was assisted by the following committee members, Dr. Albert W. Moulton, Jr., and Dr. William A. Monkhouse.

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TUBERCULOSIS ABSTRACTS*

Issued by the National Tuberculosis Association

Bed Rest in the Treatment of Tuberculosis

A Statement by the Committee on Therapy of the American Trudeau Society, The American Review of Tuberculosis, June, 1954.

The continuing reports showing the increased effectiveness of antimicrobial therapy in the treatment of pulmonary tuberculosis have caused many physicians to question the necessity or advisability of prolonged bed rest.

This has been further accentuated by the featured publication in newspapers and magazines of proposed clinical studies, although no such studies have in fact progressed to a stage which permits even preliminary conclusions to be drawn. Programs for the treatment of unhospitalized patients are frequently misnamed and misinterpreted as "ambulatory" treatment programs, as opposed to bed-care programs. In actuality, such programs are designed to supplement hospital care of patients, rather than to replace it by: (1) commencing antimicrobial therapy before hospitalization can be effected in communities where there is shortage of hospital beds; and, (2) continuing long-term drug therapy after control of the disease has been effected by hospital treatment. Even when home care is substituted entirely for hospital care by organized outpatient services, provision is made for bed care in the home. The designation of programs of this type as "ambulatory" presupposes an abandonment of the principle of rest therapy which is not intended and is not yet, at least, recommended by any official group.

The Committee again states that, from the facts now available, there is no evidence to support a reduction in the amount of rest therapy from that of past practices except as this may be justified by an earlier attainment of an inactive status of the disease. There appears to be no doubt that antimicrobial therapy has materially shortened the period of recovery in the average case of tuberculosis, and that it has greatly decreased the case mortality rate. This does not necessarily imply, however, that it has altered the indications for rest therapy during the active phases of the illness.

The studies which are in progress to determine to what extent bed rest may be safely dispensed with, or in what categories or stages of the disease it may play an unimportant role in therapy, will require a long period of study. Until these studies are completed, the clinician will be well advised to adhere to the established indications for bed care. Essentially, these consist of relatively complete bed rest in

accordance with previously accepted principles, until all symptoms have cleared, all cavities have been lost to view roentgenographically, all regressive infiltrations have reached an unchanging status, and sputum or gastric washings have become negative for tubercle bacilli by direct examination and culture. From this stage, gradual physical rehabilitation by progressive mobilization of the patient is permitted and is usually so graded to restore him to relatively normal activities no sooner than in six to twelve months. The total period of disability, although greatly shortened on the average, must still be estimated even in relatively mild and favorably responding cases as a minimum of one year. Even after this, the usual protective restrictions as to character and hours of work and the avoidance of strenuous exertion or fatigue must be observed for at least several years. The continuation of antimicrobial therapy itself for a total of one and one-half to two years is commonly recommended, but information is not yet available with respect to whether this provides adequate protection to permit any shortening of the convalescent period.

The indications for rest therapy during the active phases of tuberculosis are not altered by the proposals that patients may subsequently be treated with either surgical collapse or resection. A preliminary period of bed rest, combined with antimicrobial therapy, until all symptoms have cleared, cavities have diminished in size, or remain unchanged, and infiltrations have reached a relatively unchanging status is suggested. A continued period of rest after the surgical therapy is completed until it is evident that sputum or gastric washings will become and remain negative by culture and that the patient be symptom free should be used. From this stage, gradual physical rehabilitation for a period of several months, with the usual further protective restrictions, is indicated.

Robert L. Yeager, M. D., Robert A. Goodwin, M. D., Edward F. Parker, M. D., Carl Muschenheim, M. D., Paul T. Chapman, M. D., Morris C. Thomas, M. D., Roger Mitchell, M. D., Raymond F. Corpe, M. D., Robert H. Ebert, M. D., Chairman. Committee on Therapy, American Trudeau Society.

(The printing of Tuberculosis Abstracts is made possible by the coöperation of your local tuberculosis and health association.)

* From Vol. XXVII, December, 1954, No. 12.

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of the
MAINE MEDICAL ASSOCIATION



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Best Wishes to all our friends
for a
Very Merry Christmas and a
Happy New Year

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It is Christmas again and with it comes the realization of how much it means to have the friendship and good will of folks like you.

It gives us great pleasure to extend our very best wishes to those who's friendship we treasure.

MAINE SURGICAL SUPPLY CO.
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